Great Britain

THE NAUTICAL ALMANAC AND ASTRONOMICAL EPHEMERIS FOR THE YEAR 1797.

PUBLISHED BY ORDER OF THE

COMMISSIONERS OF LONGITUDE.

LONDON:

PRINTED BY C. BUCKTON, GREAT PULTENEY STREET;

AND,

SOLD BY P. ELMSLY, STRAND, BOOKSELLER TO THE SAID *COMMISSIONERS.*

M DCC XCII.

[Price *Three Shillings and Sixpence.*]

EXTRACT from the ACT of PARLIAMENT concerning the Longitude, made in the Fifth Year of the Reign of His present Majesty.

WHEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from time to time, judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table, or Tables constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them: And if any Person or Persons not so licensed, or not being authorised by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Plaint, or Information, in any of His Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to His Majesty, his Heirs and Successors, and the other Moiety to him or them that shall prosecute, inform, or sue for the same.

EXTRACT of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except ſo much thereof as relates to the Appointment and Authority of the Commiſſioners thereby conſtituted, and alſo ſuch Clauſes as relate to the conſtructing, printing, publiſhing, vending, and licenſing of Nautical Almanacs and other uſeful Tables; and for the more effectual Encouragement and Reward of ſuch Perſon and Perſons as ſhall diſcover a Method for finding the ſame, or ſhall make uſeful Diſcoveries in Navigation; and for the better making Experiments relating thereto: Made in the Fourteenth Year of the Reign of His preſent Majeſty.

BE it Enacted by the KING's Moſt Excellent Majeſty, by and with the Advice and Conſent of the Lords Spiritual and Temporal, and Commons, in this preſent Parliament aſſembled, and by the Authority of the ſame, That each and every of the ſaid recited Acts (ſave and except ſuch Clauſe and Clauſes in each or any of them as relate to the Appointment or Authority of all or any of the Commiſſioners thereby reſpectively conſtituted, and alſo ſuch Clauſe and Clauſes as relate to the conſtructing, printing, publiſhing, vending, and licenſing of Nautical Almanacs, and other uſeful Tables) ſhall, from and after the Twenty-fourth Day of *June* One thouſand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and ſufficient Encouragement to any Perſon or Perſons who ſhall diſcover any Method or Methods for finding the ſaid Longitude, Be it Enacted by the Authority aforeſaid, That the Firſt Author or Authors, Diſcoverer or Diſcoverers, of each and every ſuch Method or Methods, his or their Executors, Adminiſtrators, or Aſſigns, ſhall be intitled to and have the Rewards or Sums of Money herein-after mentioned; that is to ſay, In caſe the Method propoſed ſhall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five Thouſand Pounds, if ſuch Method determines the ſaid Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thouſand Five hundred Pounds, if it determines the ſame to Two Thirds of that Diſtance; and to the Reward or Sum of Ten thouſand Pounds, if it determines the ſame to One Half of the ſaid Diſtance: Which reſpective Rewards ſhall be due and paid when ſuch Method ſhall have been ſufficiently tried by the following Experiments and

EXTRACT, &c.

Voyages to be made and performed by ſuch Perſons, and under ſuch Reſtrictions, as the ſaid Commiſſioners for the Diſcovery of Longitude at Sea reſpectively conſtituted by the above-recited Acts, or the major Part of them, ſhall think fit to appoint and direct; (that is to ſay), When and ſo ſoon as Two or more Time-keepers of the ſame Conſtruction ſhall have been tried at the ſame Time, for the Space of Twelve Months, at the Royal Obſervatory at *Greenwich*, then in Two Voyages round the Iſland of *Great Britain*, in contrary Directions, and in ſuch other Voyages to different Climates as the ſaid Commiſſioners ſhall think fit to direct and appoint; and after their Return from ſuch Voyages, or any of them, for ſuch longer Time, at the ſaid Obſervatory, not exceeding Twelve Months, as the ſaid Commiſſioners ſhall judge neceſſary; and alſo when and ſo ſoon as the ſaid Commiſſioners, or Two Thirds of them at the leaſt, ſhall, after ſuch Experiments and Voyages have been made and performed as aforeſaid, have declared and determined that ſuch Method is generally practicable and uſeful, and ſufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforeſaid, in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and alſo when and ſo ſoon as the Principles and Practice of ſuch Method are fully diſcovered and explained to the Satisfaction of the ſaid Commiſſioners, or Two Thirds of them at leaſt; and ſuch Author or Authors, Diſcoverer or Diſcoverers, ſhall have delivered up and aſſigned over to the ſaid Commiſſioners, for the Uſe of the Public, the abſolute Property of ſuch Time-keepers as ſhall have been tried by ſuch Experiments and Voyages as aforeſaid, together with all Plates, Deſcriptions, Theories, and Explanations belonging or relating to the ſame, and which ſhall contain the Whole of ſuch Diſcovery of the Longitude; and in caſe the Method propoſed ſhall be by means of improved Solar and Lunar Tables, then and in ſuch Caſe the Author or Authors of ſuch improved Solar and Lunar Tables, their Executors, Adminiſtrators, or Aſſigns, ſhall be intitled to and have the Reward or Sum of Five Thouſand Pounds, if ſuch Solar and Lunar Tables ſhall prove ſufficiently exact to ſhew the Diſtance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, anſwering to about Seven Minutes of Longitude, after making an allowance of Half a Degree for the Errors of Obſervation; and when it ſhall appear to the Satisfaction of the ſaid Commiſſioners, or Two Thirds of them at leaſt, that ſuch Tables are conſtructed intirely upon the Principles of Gravitation laid down by Sir *Iſaac Newton* (except with reſpect to thoſe Elements which muſt neceſſarily be taken from aſtronomical Obſervations), and alſo when the Truth of ſuch Tables ſhall have been further confirmed and proved by Compariſon with a Series of aſtronomical Obſervations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motions; which Reward ſhall be due and paid, when the ſaid Commiſſioners, or two Thirds of them at leaſt, ſhall have declared

and determined, that ſuch Tables are ſufficiently exact to ſhew the Diſtance of the Moon from the Sun and Stars in the Heavens, within the limits above-mentioned; and alſo when the Author or Authors of ſuch improved Solar and Lunar Tables, his or their Executors, Adminiſtrators, or Aſſigns, ſhall have delivered up and aſſigned over to the ſaid Commiſſioners, for the Uſe of the Public, the abſolute Right and Property to and in the ſame, together with the Theory relating thereunto; and in caſe any other Method ſhall be propoſed for finding the Longitude at Sea beſides thoſe before-mentioned, that then and in ſuch Caſe the Firſt Author or Authors, Diſcoverer or Diſcoverers, of any ſuch Method, his or their Executors, Adminiſtrators, or Aſſigns, ſhall be intitled to and have the Reward or Sum of Five Thouſand Pounds, if it ſhall determine the ſaid Longitude within One Degree of a great Circle or Sixty geographical miles; to the Reward or Sum of Seven thouſand Five hundred Pounds, if it ſhall determine the ſame to Two Thirds of that Diſtance; and to the Reward or Sum of Ten thouſand Pounds, if it ſhall determine the ſame to One Half of the ſame Diſtance; which reſpective Rewards ſhall be due and paid, ſo ſoon as the ſaid Commiſſioners, or Two Thirds of them at leaſt, ſhall, after proper Trial have been made by their Appointment and Direction, have determined that ſuch Method ſhall be generally practicable and uſeful for finding the Longitude at Sea within the reſpective limits above-mentioned.

And be it further Enacted, by the Authority aforeſaid, That when and ſo ſoon as any ſuch Method or Methods, for the Diſcovery of the ſaid Longitude, ſhall be tried, as before-mentioned, and found practicable and uſeful at Sea, and ſufficiently exact to determine the Longitude within any of the Degrees or Limits aforeſaid, the ſaid Commiſſioners, or Two Thirds of them, ſhall certify the ſame, under their Hands and Seals, to the Commiſſioners of the Navy for the Time being, together with the Name or Names of the Perſon or Perſons who ſhall be the Author or Authors of ſuch Method or Methods; and upon the Receipt of ſuch Certificate, the ſaid Commiſſioners of the Navy are hereby authoriſed and required to make out a Bill or Bills upon the Treaſurer of the Navy for the reſpective Sum or Sums of Money to which the Author or Authors of ſuch Propoſal, his or their Executors, Adminiſtrators, or Aſſigns, ſhall be intitled by virtue of this Act; which Sum or Sums the ſaid Treaſurer is hereby required to pay to the ſaid Author or Authors, their Executors, Adminiſtrators, or Aſſigns accordingly, out of any Money that may be in his Hands unapplied to the Uſe of the Navy, according to the true Intent and Meaning of this Act.

And be it further Enacted, by the Authority aforeſaid, That the ſaid Commiſſioners for the Diſcovery of Longitude at Sea, or any Five or more of them, ſhall have full Power and Authority to hear and receive any Propoſal or Propoſals that ſhall be made to them

for discovering the said Longitude, or for making any other useful Improvement in Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Discovery or Improvement as to think it proper to cause Experiments to be made thereof, they shall certify the same, together with the Names of the Author or Authors of such Proposal or Proposals, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorised and required to make out a Bill or Bills upon the Treasurer of the Navy for any Sum or Sums of Money as the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall think necessary for making such Experiments; which Sum or Sums the Treasurer of the Navy is hereby required to pay immediately to such Person or Persons as shall be appointed by the said Commissioners to make those Experiments out of any Money which shall be in his the said Treasurer's Hands unapplied as aforesaid.

And be it further Enacted, by the Authority aforesaid, That if any Person or Persons shall make any Discovery for finding the Longitude at Sea, which, though not of so great Use as to be intitled to any of the great Rewards above specified, shall nevertheless be adjudged by the said Commissioners for the Discovery of Longitude at Sea, or the major Part of them, to be of considerable Use to the Public, or shall make any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; then, and in such Case, such Person or Persons, his or their Executors, Administrators, or Assigns, shall, from time to time, have and receive such less Reward or Sum or Sums of Money as the said Commissioners, or the major Part of them, shall think reasonable; and certify accordingly, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorised and required to make out a Bill or Bills upon the Treasurer of the Navy for any such Sum or Sums of Money, which the said Treasurer is hereby authorized and required to pay immediately to such Person or Persons, his or their Executors, Administrators, or Assigns, out of any Money that shall be in his the said Treasurer's Hands unapplied as aforesaid.

Provided also, and it is hereby further Enacted, That in case any Person or Persons who shall and may have received any Sum or Sums of Money, by virtue of this Act, as a Reward for any Method of discovering the Longitude at Sea, shall afterwards become intitled to any of the greater Rewards appointed by this Act, for or on account of the same Method; that then, and in such Case, such Sum or Sums of Money as they shall or may have received as aforesaid shall be considered as Part of such greater Reward, and deducted therefrom accordingly; and that no Person shall receive more in the Whole for any One Method for discovering the Longitude at Sea than the greatest Reward appointed for such Method by the Act.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we think fit to employ you to print the Nautical Almanacs and Astronomical Ephemerides for the Years 1796, 1797, 1798, 1799, and 1800; We do, in pursuance of the power vested in us by Acts of Parliament, hereby license, authorize and impower you to print the Nautical Almanacs and Astronomical Ephemerides for those Years accordingly, together with such other useful Tables for facilitating the method of discovering the Longitude at Sea as have been constructed under our direction, and will be delivered to you by the Rev. Dr. NEVIL MASKELYNE, His Majesty's Astronomer Royal, at *Greenwich*; and for so doing this shall be your sufficient Warrant. Given under our Hands and Seals the 12th Day of *July*, 1788.

HOWE	(L. S.)
RODNEY	(L. S.)
H. PIGOT	(L. S.)
H. PALLISER	(L. S.)
M. BARTON	(L. S.)
S. BARRINGTON	(L. S.)
G. POCOCK	(L. S.)
JOS. BANKS	(L. S.)
N. MASKELYNE	(L. S.)
T. HORNSBY	(L. S.)
J. SMITH	(L. S.)
E. WARING	(L. S.)
A. SHEPHERD	(L. S.)
G. ROSE	(L. S.)
T. STEELE	(L. S.)
P. STEPHENS	(L. S.)
C. MIDDLETON	(L. S.)
J. SMITH	(L. S.)

To Mr. CHRISTOPHER BUCKTON, Printer, *Great Pulteney-Street, Golden-Square.*

By Command of the Commissioners.

H. PARKER, Secretary.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we think fit to employ you to publish and vend, and to cause to be published and vended, all such Nautical Almanacs and Astronomical Ephemerides, and such other useful Tables, constructed under our Direction, as have hitherto been printed and shall hereafter be printed for the several Years next ensuing, down to the Year 1800 inclusive. We do therefore, in pursuance of the power vested in us by Act of Parliament, hereby license, authorize, and impower you to publish and vend, and to cause to be published and vended, such Nautical Almanacs, and Astronomical Ephemerides, as well as such other useful Tables, constructed under our Direction, as have hitherto been printed, or shall hereafter be printed for the several Years next ensuing, down to the Year 1800 inclusive. For which this shall be your Warrant. Given under our Hands and Seals the 5th Day of *December*, 1789.

To Mr. PETER ELMSLY,

Bookseller,

In the STRAND.

CHATHAM	(L.S.)
RODNEY	(L.S.)
H. PALLISER	(L.S.)
S. BARRINGTON	(L.S.)
G. POCOCK	(L.S.)
JOS. BANKS	(L.S.)
N. MASKELYNE	(L.S.)
T. HORNSBY	(L.S.)
J. SMITH	(L.S.)
E. WARING	(L.S.)
A. SHEPHERD	(L.S.)
G. ROSE	(L.S.)
T. STEELE	(L.S.)
P. STEPHENS	(L.S.)
C. MIDDLETON	(L.S.)
J. SMITH	(L.S.)

By Command of the Commissioners.

H. PARKER, Secretary.

PREFACE.

THE Commiſſioners of Longitude, in Purſuance of the Powers veſted in them by Act of Parliament, preſent the Public with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1797, being the Thirty-firſt Impreſſion, to be continued annually; a Work which muſt greatly contribute to the Improvement of Aſtronomy, Geography, and Navigation. This EPHEMERIS contains every Thing eſſential to general Uſe that is to be found in any Ephemeris hitherto publiſhed, with many other uſeful and intereſting Particulars never yet offered to the Public in any Work of this Kind. The Tables of the Moon had been brought by the late Profeſſor MAYER, of *Gottingen*, to a ſufficient Exactneſs to determine the Longitude at Sea, within a Degree, as appeared by the Trials of ſeveral Perſons who made Uſe of them. The Difficulty and Length of the neceſſary Calculations ſeemed the only Obſtacles to hinder them from becoming of general Uſe: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Neceſſity of calculating the Moon's Place from the Tables, and afterwards computing the Diſtance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculation; ſo that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Diſtance on Account of Refraction and Parallax, which is alſo rendered very eaſy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and publiſhed in the Firſt Edition of the Tables requiſite to be uſed with the EPHEMERIS, and ſince, with Improvements, in the Second Edition of the ſame Tables; or by either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly publiſhed in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the Firſt by myſelf, and the Second by Mr. GEORGE WITCHELL, which are now alſo annexed to the Second Edition of the REQUISITE TABLES; but ſtill more ſo by the GENERAL TABLES for correcting the apparent Diſtance of the Moon and a Star or the Sun from the Effects of Refraction and Parallax, computed at great Expence by Order of the Commiſſioners of Longitude, and publiſhed under the Care of Dr. SHEPHERD, Plumian Profeſſor of Aſtronomy and Experimental Philoſophy at CAMBRIDGE, in 1772.

MAYER's laſt Manuſcript Tables of the Sun and Moon, and his curious and elaborate Theory of the Moon, were received by the

Board of Longitude, after his decease, for which his Widow received a Reward of Three Thousand Pounds, by Act of Parliament, and the celebrated Mr. LEONARD EULER the Sum of Three Hundred Pounds for having furnished the Theorems made Use of by Mr. MAYER in his Theory. Both the Tables and Theory were printed under my Inspection, and published in 1770.

The Sun's Longitude, and every Thing relating thereto, has been always inserted in the NAUTICAL ALMANAC, as computed from these Tables, from its first Beginning in 1767 to the present Time. The Moon's Place in the Heavens was inserted as calculated directly from MAYER's TABLES, in the NAUTICAL ALMANAC, from 1767 to 1776 inclusive, or the first ten Years. But from the NAUTICAL ALMANAC of 1777 to that of 1788, both inclusive, or the next twelve Years, the Moon's Place was inserted, as calculated from new Tables, improved from MAYER's Tables, composed by Mr. CHARLES MASON, under my Direction, from Calculations made by Order of the Board of Longitude upon the Series of lunar Observations made by the late Dr. BRADLEY, and published in the NAUTICAL ALMANAC of 1774; in which new Tables the Epoch of the Moon's mean Longitude is 1″ less, that of the Apogee is 56″ less, and that of the ascending Node 45″ more than in MAYER's printed Tables, and the Equations are calculated to Tenths of a Second; and moreover one new Equation is introduced, whose Argument is the mean Distance of the Moon from the Sun's Apogee, and Maximum is 16″, 4. These Tables compared with the above-mentioned Series of Observations, a proper Allowance being made for the unavoidable Error of Observation, seemed to give always the Moon's Longitude in the Heavens correctly within 45″ of a Degree. But from the NAUTICAL ALMANAC of 1789 to that of 1796, both inclusive, the Moon's Place was inserted as calculated from new Tables still farther corrected by Mr MASON, entitled by him TABLES of 1780, as having been completed about that Time, being rendered more exact than the former by the Addition of eight Equations to the Number in MAYER's Tables, taken from MAYER's Theory as to the Arguments, but settled as to the Maxima, from the said Observations, and the Whole being calculated to Tenths of a Second. These last new Tables when compared with 177 of the above-mentioned Series of Observations, being all in the Whole Series in which certain Tables composed by Mr. MASON called Tables of 1778, but less exact than those of 1780, differed above 20″ from the Observations, seemed, after making a proper Allowance for the unavoidable Error of Observation, to give always the Moon's Longitude in the Heavens correct within 30 Seconds of a Degree. At the same Time the Error of these Tables in Latitude seemed never to exceed a Minute, which will but triflingly affect the computed Distances of the Moon from the Sun and zodiacal Stars set down in the EPHEMERIS. It may be proper, however, here to

obſerve, that the 18th Equation of theſe Tables, whoſe Argument is the mean Longitude of the Moon's aſcending Node, or the ſame with that of the laſt Equation, or that of the Equinoctial Points, has heen omitted deſignedly in the Calculations of the EPHEMERIS, as it does not yet ſufficiently appear that ſuch an Equation ſhould ariſe from the Theory of Gravity, and the Series of Dr. BRADLEY's Obſervations affords too ſhort a Period to ſtate a Point of ſuch Delicacy as this Equation of not quite 8″ from a ſemi-period only of its Variations.

I ſhall now offer ſome Remarks on Mr. MAYER's mean Motions of the Sun and Moon, thoſe of the Moon being taken the ſame in Mr. MASON's Tables, and propoſe a ſmall Correction of them, as well as of the Longitudes and Latitudes of the fixt Stars.

Mr. MAYER's Tables of the Sun having been ſettled from M. DE LA CAILLE's Obſervations and his own, made between the Years 1750 and 1760, may be ſuppoſed to give the Epochs of the mean Places of the Sun pretty exact for that Time. And Mr. MASON's Tables of 1780 having been ſettled from Dr. BRADLEY's Obſervations, made alſo between 1750 and 1760, may be ſuppoſed to give the Epochs of the mean Places of the Moon pretty exact for that time. But the Rates of the Sun's and Moon's mean Motions for whole Years or Centuries in the ſame Tables may require ſome Correction for the Reaſons which I am now to adduce. MAYER, in the Conſtruction of his Tables aſſumed the Preceſſion of the Equinoxes, or the annual Motions of the fixt Stars in Longitude to be exactly 50″,3, without paying any Regard to the Alteration of the Place of the Equinox ariſing from the Tranſlation of the Plane of the Ecliptic by the Action of the Planets. Dr. BRADLEY, by comparing his own Obſervations of Declinations of Stars lying on both Sides of the Equinoctial Colure with the like Obſervations of TYCHO BRAHE, had found the Preceſſion of the Equinoxes in Longitude to be exactly 1° in 71½ Years, or at the Rate of 50″, 35 in a Year, which is evidently what ariſes from the Motion of the Plane of the Equator alone, being occaſioned by the Actions of the Sun and Moon upon the ſpheroidical Figure of the Earth. But the Equinoctial Point is alſo altered, though in a far leſs Degree, by the continual Motion of the Plane of the Ecliptic, owing to the Action of the Planets, and goes forward 0″,15 in a Year from that Cauſe along the Ecliptic, which will diminiſh the Preceſſion of the Equinoxes or the apparent annual Motions of the fixt Stars, lying near the Plane of the Ecliptic, in Longitude as much, and reduce them from 50″, 35 to 50″,20, which is 0″,10 leſs than aſſumed in MAYER's Tables; for as to thoſe which have any conſiderable Latitude, their Longitudes will be further affected by a ſecular Variation relative both to their Longitude and Latitude, as expreſſed in the 44th Table annexed to the 1ſt Vo-

lume of my Obſervations made at the Royal Obſervatory, being derived from the ſame Cauſe, the Motion of the Plane of the Ecliptic produced by the Action of the Planets, and its being performed upon an Axis not very remote from the Line of the Equinoxes. It is obvious that the ſame Cauſe will alſo affect the apparent Latitudes of the fixt Stars. Now MAYER having ſettled the mean Motions of the Sun and Moon from the Equinoxes, by Compariſon of Obſervations made in his Time with thoſe made by Aſtronomers in former Ages, and particularly by Mr. FLAMSTEAD 60 Years before him, aſſuming the annual Preceſſion of the Equinoxes to be 50″, 3 or 0″, 1 too great, and MAYER's mean Motions of the Moon having been adopted in Mr. MASON's Tables, therefore the annual mean Motions of the Sun and Moon from the Equinox in MAYER's Tables, and the Moon's mean Motions in Mr. MASON's Tables are too great by 0″,10 in a Year, and muſt be diminiſhed accordingly, or at the Rate of 10″ in a Hundred Years; agreeable to Schol. 3, Prob. 3, of the Explanation and Uſe of MAYER's Solar and Lunar Tables; where he inſiſts that their mean Motions are rightly ſettled from Obſervations, or very nearly ſo, with reſpect to the fixed Stars; but if it ſhould be thought proper to ſtate the Preceſſion of the Equinox ſlower or quicker than 50″,3 in a Year, the mean Motions of the Sun and Moon ſhould be all made ſlower or quicker by the ſame Quantity.

Hence as the Obſervations by which Mr. MAYER ſettled the Epochs of his ſolar Tables, and by which Mr. MASON ſettled the Epochs of his lunar Tables of 1780, were made about the Year 1756 at a Medium, the Correction of 0″, 10 in a Year, above directed to be made to the Moon's Motions ſhould be dated from that Period; or there ſhould be ſubſtracted at the Rate of 1″ in 10 Years from the Epochs after 1756, and be added at the ſame Rate to the Epochs before 1756, in Mr. MAYER's and Mr. MASON's Tables.

The Longitudes of the Stars of Dr. BRADLEY's Catalogue, inſerted in the NAUTICAL ALMANAC of 1773, having been likewiſe ſettled from his Obſervations made about the Year 1756, and carried on to the Year 1760 by the annual Preceſſion 50″, 35, ſhould be firſt reduced back to the Beginning of 1756 by the ſame annual Preceſſion 50″, 35 which he uſed, and then carried forward to any future Period, or backward to any preceding one by the true annual Preceſſion of the Equinoxes 50″, 20 for every Year following or preceding 1756, and further corrected by the Equation of the ſecular Motion derived from my 44th Table. The Latitudes of the fixt Stars contained in the ſame Catalogue ſhould alſo be corrected by the ſecular Equation derived from my 45th Table, according to the Number of the Years before or after 1756.

In the Interval of 41 Years, which have elapſed ſince 1756, to the preſent Year, theſe Corrections having amounted to 4″ in the

Epochs of Longitude of the Sun and Moon, and to 13″ in the Longitude of some of the Stars from which the Moon's Distances are computed in the EPHEMERIS, and to 20″ in some of their Latitudes, it has been thought proper to allow for them: Therefore the Sun's Place in this EPHEMERIS and the succeeding ones will be found computed from MAYER's Tables, and the Moon's Place from Mr. MASON's Tables of 1780, both corrected in the Manner above-mentioned, and the Distances of the Moon from the Stars will be found computed from their Longitudes, carried on and corrected as above-mentioned; their Latitudes too should have been taken according to the Corrections above-mentioned, but the general Tables of Moon's Distances from the particular Stars having been made Use of as far as the EPHEMERIS of 1802 inclusive, in which the Latitudes of the Stars have been taken which belong to the Year 1780, those Corrections could not be applied; the Error resulting, however, will be very trifling, and is of the less Consequence as the Moon's Latitude in the Tables is sometimes subject to an Error of a Minute, But in the EPHEMERIS of 1803 the Latitudes as well as Longitudes of the Stars are proposed to be thoroughly corrected; and the Moon's Distances from them computed by the late Mr. TAYLOR's accurate Tables of Logarithmic Sines and Tangents to every Second of the Quadrant.

To illustrate these Corrections by Examples:—Let it be required to find the Sun's mean Longitude and that of his Apogee, by MAYER's Tables; and the Moon's mean Longitude, and mean Anomaly, and the mean Longitude of her Node; and the mean Longitude and Latitude of Fomalhaut, all to the Beginning of 1797. The Sun's mean Longitude will be 9s. 10°. 37′. 28″, 6, and the Longitude of his Apogee 3s. 9°. 29′. 11″, 9. The Moon's mean Longitude 10s. 7°. 34′ 30″, 7, and with Acceleration 10s. 7°. 34′. 38″, 2. Her mean Anomaly 0s. 24°. 6′. 53″, and with Acceleration 0s. 24°. 7′. 15″ and the Longitude of her Node, 3s. 1°. 15′. 1″, 9. The Longitude of Fomalhaut, 11s. 0°. 59′. 56″, 9 and its Latitude, 21°. 6′. 35″, 0 South; its Variation of Longitude in 100 Years different from the mean Precession, at the Rate of 50″, 20 in a Year, by Table 44 being + 17″, 3 and its Variation of Latitude in the same Time by Table 45, being + 17″, 2.

The Calculations of the Planets Places have been made for this EPHEMERIS from M. DE LA LANDE's Tables contained in the Second Edition of his Astronomy, as they have been for every EPHEMERIS beginning with that of 1780; and those of the Eclipses of Jupiter's Satellites made from Mr. WARGENTIN's Tables annexed to the same Tables of M. DE LA LANDE, excepting the Eclipses of Jupiter's Second Satellite, which are inserted in this EPHEMERIS for the Seventeenth Time from new Tables transmitted to me from their learned Author Mr. WARGENTIN, Secretary to the Royal Academy of Sciences at STOCKHOLM, and published at the End of the Nautical Almanac of 1779.

PREFACE.

All the Articles of the EPHEMERIS were computed by two separate Persons, and examined by a third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, which for Noon were computed by one Person, and for Midnight by another, and the Truth of these Calculations ascertained by Means of Differences, which for the Moon's Longitude were carried as far as the Fourth Order.

NEVIL MASKELYNE,
ASTRONOMER ROYAL.

GREENWICH,
Sept. 1791.

EXPLANATION OF THE CHARACTERS USED IN THE ASTRONOMICAL EPHEMERIS.

The PLANETS, &c.

☉ The Sun.	♂ Mars.
☽ The Moon.	♃ Jupiter.
☿ Mercury.	♄ Saturn.
♀ Venus.	♅ Georgian.
⊖ The Earth.	

☊ The Moon's, or any other Planet's Ascending Node.
☋ The Descending Node.
☌ Conjunction, or Planets situated in the same Longitude.
□ Quadrature, or Planets situated in Longitudes differing 3 Signs from each other.
☍ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other.

N. North.	Inf. Inferior.	Im. Immersion.
S. South.	Sup. Superior.	Em. Emersion.

SIGNS of the ZODIAC.

S.		S.	
0	♈ Aries.	6	♎ Libra
1	♉ Taurus.	7	♏ Scorpio.
2	♊ Gemini.	8	♐ Sagittarius.
3	♋ Cancer.	9	♑ Capricornus.
4	♌ Leo.	10	♒ Aquarius.
5	♍ Virgo.	11	♓ Pisces.

PRINCIPAL ARTICLES

OF

THE ALMANAC OF 1797.

Chronological Cycles.		*Ember Days.*	
Dominical Letter - - - -	A	March - - - -	8, 10 and 11
Lunar Cycle, or Golden Numb.	12	June - - - -	7, 9 and 10
Epact - - - - - - - - -	1	September - - -	20, 22 and 23
Solar Cycle - - - - - - -	14	December - - -	20, 22 and 23
Roman Indiction - - - -	15		

MOVEABLE FEASTS.

Septuagesima Sunday -	Feb. 12	Low Sunday - - - - -	Apr. 23
Quinq. or Shrove Sund.	Feb. 26	Rogation Sunday - - -	May 21
Ash Wed. or 1st day of Lent	Mar. 1	Asc. Day, or Holy Thurs.	May 25
Middle Lent Sunday -	Mar. 26	Whitsunday - - - -	June 4
Palm Sunday - - - - -	Apr. 9	Trinity Sunday - - -	June 11
EASTER DAY - - - -	Apr. 16	Advent Sunday - - -	Dec. 3

TERMS.

	London.		*Oxford.*		*Cambridge.*	
	Begins	Ends	Begins	Ends	Begins	Ends
Hilary, or Lent.	Jan. 23	Feb. 13	Jan. 14	Apr. 8	Jan. 13 Div. Feb. 24. Noon.	April 7
Easter	May 3	May 29	April 26	June 1	Apr. 26 Div. June 1. Noon.	July 7
Trinity	June 16	July 5	June 14	July 15		
Michael.	Nov. 6	Nov. 28	Oct. 10	Dec. 18	Oct. 10 Div. Nov. 12. Midn.	Dec. 16

Oxford Act July 10.——*Camb. Commencement July* 4.

OBLIQUITY, &c.

Obliquity of the Ecliptic.	1797	Equation of Equinoctial Points.
D. M. S.		S.
23. 27. 55, 5	Jan. 1.	— 18, 0
23. 27. 56, 2	Apr. 1.	— 18, 0
23. 27. 56, 9	July 1.	— 17, 8
23. 27. 57, 6	Oct. 1.	— 17, 5
23. 27. 58, 2	Dec. 31.	— 17, 1

SOLAR AND LUNAR ECLIPSES IN THE YEAR 1797.

June 8 and 9. *MOON eclipsed, invisible at Greenwich.*

	D. H. M.
Beginning of Eclipse	8. 21. 41
Beginning of total Darkness	8. 22. 57$\frac{2}{3}$
Ecliptic ☌	8. 23. 26$\frac{1}{4}$
Middle	8. 23. 30
End of total Darkness	9. 0. 2$\frac{1}{3}$
End of Eclipse	9. 1. 19

Digits eclipsed 14°. 2′ from N. Side of ☾'s Shadow.

June 24. *SUN eclipsed, visible at Greenwich.*

	H. M.
Beginning	4. 44
Visible ☌	5. 28$\frac{1}{3}$
Middle	5. 29$\frac{1}{2}$
End	6. 11$\frac{3}{4}$

Digits eclipsed 4°. 20′ on ☉'s North Limb.

☽ makes first Impression on ☉'s Circumference at 90°$\frac{1}{2}$ from ☉'s Vertex on the Right Hand.

Dec. 3. *MOON eclipsed, visible at Greenwich.*

	H. M.
Beginning of Eclipse	14. 37
Beginning of total Darkness	15. 36$\frac{1}{3}$
Ecliptic ☌	16. 26
Middle	16. 26$\frac{4}{5}$
End of total Darkness	17. 17$\frac{1}{4}$
End of Eclipse	18. 16$\frac{3}{5}$

Digits eclipsed 20°. 35′ from S. Side of ☾'s Shadow.

Dec. 17. *SUN eclipsed, invisible at Greenwich.*

☌ at 18^h. 39′ in Long. 8^s. 26°. 56′. ☽'s Lat. 1°. 13′$\frac{1}{2}$ S.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.
Sun.	1	1*st Sun. after Christ. Circumcision.*
M.	2	
Tu.	3	
W.	4	
Th.	5	
F.	6	*Epiphany.*
Sa.	7	
Sun.	8	1*st Sunday after Epiphany.*
M.	9	Lucian.
Tu.	10	
W.	11	
Th.	12	
F.	13	Hil. Camb. Term begins.
Sa.	14	Oxford Term begins.
Sun.	15	2*d Sunday after Epiphany.*
M.	16	
Tu.	17	
W.	18	*Q. Charlotte's birth-day kept.* Prisca.
Th.	19	
F.	20	Fabian. In 8 days of St.
Sa.	21	Agnes. H. 1 ret.
Sun.	22	3*d Sun. aft. Ep.* Vincent.
M.	23	Hilary Term begins.
Tu.	24	
W.	25	*Conversion of St. Paul.*
Th.	26	
F.	27	*Pr. Aug. Fred. b.* In 15
Sa.	28	days of St. Hil. 2 ret.
Sun.	29	4*th Sunday aft. Epiphany.*
M.	30	*K. Charles I. Martyr.*
Tu.	31	

Phases of the MOON.

	D. H. M.
☽ *First Quarter*	5. 19. 35
○ Full Moon	12. 13. 0
☾ *Last Quarter*	19. 8. 49
● New Moon	27. 13. 36

Other *Phenomena.*

D. H. M.	
1. 1. 3	☽ ι ♑
3. 4. 47	☽ 1 ad ↓ ♒
3. 5. 38	☽ 2 ad ↓ ♒
3. 5. 47	☽ 3 ad ↓ ♒
4. 5. 39½ Im.	33 ♓ ✱ 9′½ N of ☽'s C
4. 6. 46½ Em.	5′⅓ N
9. 8. 41½ Im.	♉ ✱ 16′ N. of ☽'s C.
9. 9. 8 Em.	14′ N.
9. 22. 17	☽ ι ♉
10. - -	♀ ρ Ophiuchi, ✱ 42′ N.
10. 11. 10	☽ ζ ♉
10. 11. 53 Im.	♄, ✱ 7′½ N. of ☽'s C.
10. 12. 54½ Em.	5′¾ N.
11. 0. 58	☽ η ♊
11. 3. 55	☽ μ ♊
13. 6. 44	☽ γ ♋
14. 15. 14	☽ η ♌
15. 23. 33	☽ ι ♌
17. 2. 37	☽ c ♍
18. 23. 32	☉ enters ♒
21. 2. 50	☽ 4 ad ζ ♎
21. 3. 3	☽ γ ♎
21. 7. 28	☽ η ♎
21. 12. 24	☽ θ ♎
21. 21. 55	☽ ι ♏
23. 6. 38	☽ ρ Ophiuchi.
24. - -	♃ φ ♒, ✱ 4′ North.
24. 17. 29	☽ ♀
30. - -	♀ ο ♆, ✱ 27′ North.
30. 10. 21	☽ 1 ad ↓ ♒
30. 11. 13	☽ 2 ad ↓ ♒
30. 11. 21	☽ 3 ad ↓ ♒
31. 10. 48	☽ 33 ♓

Days of the Week.	Days of the Month.	THE SUN's Longitude.	R^t. Ascen. in Time.	Declin. South.	Equation of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	9. 11. 40. 55	18. 50. 48, 6	22. 57. 5	4. 22, 5	28, 0
M.	2	9. 12. 42. 7	18. 55. 13, 2	22. 51. 30	4. 50, 5	27, 6
Tu.	3	9. 13. 43. 19	18. 59. 37, 5	22. 45. 27	5. 18, 1	27, 2
W.	4	9. 14. 44. 30	19. 4. 1, 3	22. 38. 57	5. 45, 3	26, 7
Th.	5	9. 15. 45. 41	19. 8. 24, 6	22. 32. 1	6. 12, 0	26, 2
F.	6	9. 16. 46. 51	19. 12. 47, 5	22. 24. 37	6. 38, 2	25, 7
Sa.	7	9. 17. 48. 1	19. 17. 9, 9	22. 16. 48	7. 3, 9	25, 2
Sun.	8	9. 18. 49. 10	19. 21. 31, 6	22. 8. 32	7. 29, 1	24, 6
M.	9	9. 19. 50. 18	19. 25. 52, 8	21. 59. 51	7. 53, 7	24, 0
Tu.	10	9. 20. 51. 26	19. 30. 13, 5	21. 50. 44	8. 17, 7	23, 4
W.	11	9. 21. 52. 33	19. 34. 33, 5	21. 41. 11	8. 41, 1	22, 8
Th.	12	9. 22. 53. 40	19. 38. 52, 9	21. 31. 12	9. 3, 9	22, 1
F.	13	9. 23. 54. 46	19. 43. 11, 6	21. 20. 49	9. 26, 0	21, 4
Sa.	14	9. 24. 55. 51	19. 47. 29, 7	21. 10. 2	9. 47, 4	20, 8
Sun.	15	9. 25. 56. 56	19. 51. 47, 1	20. 58. 50	10. 8, 2	20, 1
M.	16	9. 26. 58. 0	19. 56. 3, 8	20. 47. 14	10. 28, 3	19, 4
Tu.	17	9. 27. 59. 4	20. 0. 19, 8	20. 35. 15	10. 47, 7	18, 7
W.	18	9. 29. 0. 8	20. 4. 35, 2	20. 22. 52	11. 6, 4	18, 0
Th.	19	10. 0. 1. 11	20. 8. 49, 8	20. 10. 6	11. 24, 4	17, 3
F.	20	10. 1. 2. 14	20. 13. 3, 6	19. 56. 57	11. 41, 7	16, 5
Sa.	21	10. 2. 3. 16	20. 17. 16, 7	19. 43. 26	11. 58, 2	15, 7
Sun.	22	10. 3. 4. 18	20. 21. 29, 0	19. 29. 33	12. 13, 9	15, 0
M.	23	10. 4. 5. 19	20. 25. 40, 6	19. 15. 18	12. 28, 9	14, 2
Tu.	24	10. 5. 6. 19	20. 29. 51, 4	19. 0. 43	12. 43, 1	13, 4
W.	25	10. 6. 7. 19	20. 34. 1, 4	18. 45. 46	12. 56, 5	12, 6
Th.	26	10. 7. 8. 18	20. 38. 10, 6	18. 30. 28	13. 9, 1	11, 8
F.	27	10. 8. 9. 16	20. 42. 19, 0	18. 14. 51	13. 20, 9	11, 0
Sa.	28	10. 9. 10. 13	20. 46. 26, 6	17. 58. 54	13. 31, 9	10, 1
Sun.	29	10. 10. 11. 9	20. 50. 33, 3	17. 42. 37	13. 42, 0	9, 3
M.	30	10. 11. 12. 3	20. 54. 39, 2	17. 26. 2	13. 51, 3	8, 5
Tu.	31	10. 12. 12. 56	20. 58. 44, 2	17. 9. 8	13. 59, 8	

Days	Time of ☉'s Semidiam. passg Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☊'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 10, 9	16. 19, 2	2. 32, 9	9. 992659	3. 1. 12
7	1. 10, 6	16. 19, 1	2. 32, 8	9. 992710	3. 0. 53
13	1. 10, 1	16. 18, 8	2. 32, 8	9. 992850	3. 0. 34
19	1. 9, 5	16. 18, 2	2. 32, 6	9. 993094	3. 0. 15
25	1. 8, 8	16. 17, 5	2. 32, 3	9. 993420	2. 29. 56

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Emersions.		*Emersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	3. 38. 5	3	21. 36. 11	3	23. 1. 11 Im.
2	22. 6. 14	7	10. 52. 29	4	2. 1. 31 E.
4	16. 34. 24	11	0. 8. 54	11	3. 0. 55 Im.
6	11. 2. 35	14	13. 25. 29	*11	6. 0. 11 E.
* 8	5. 30. 48	18	2. 42. 13	*18	7. 1. 11 Im.
9	23. 59. 3	21	15. 59. 5	18	9. 59. 21 E.
11	18. 27. 20	25	5. 16. 8	25	11. 1. 59 Im.
13	12. 55. 37	28	18. 33. 23	25	13. 59. 2 E.
*15	7. 23. 57				
17	1. 52. 19				
18	20. 20. 41				
20	14. 49. 5			IV. Satellite.	
22	9. 17. 31				
24	3. 46. 0			* 7	7. 8. 6 Im.
25	22. 14. 32			7	10. 52. 38 E.
27	16. 43. 5			24	1. 23. 2 Im.
29	11. 11, 42			24	5. 1. 0 E.
*31	5. 40. 20				

Days of the Week.	Days of the Month.	THE SUN's Longitude.	R^t. Ascen. in Time.	Declin. South.	Equation of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	9. 11. 40. 55	18. 50. 48, 6	22. 57. 5	4. 22, 5	28, 0
M.	2	9. 12. 42. 7	18. 55. 13, 2	22. 51. 30	4. 50, 5	27, 6
Tu.	3	9. 13. 43. 19	18. 59. 37, 5	22. 45. 27	5. 18, 1	27, 2
W.	4	9. 14. 44. 30	19. 4. 1, 3	22. 38. 57	5. 45, 3	26, 7
Th.	5	9. 15. 45. 41	19. 8. 24, 6	22. 32. 1	6. 12, 0	26, 2
F.	6	9. 16. 46. 51	19. 12. 47, 5	22. 24. 37	6. 38, 2	25, 7
Sa.	7	9. 17. 48. 1	19. 17. 9, 9	22. 16. 48	7. 3, 9	25, 2
Sun.	8	9. 18. 49. 10	19. 21. 31, 6	22. 8. 32	7. 29, 1	24, 6
M.	9	9. 19. 50. 18	19. 25. 52, 8	21. 59. 51	7. 53, 7	24, 0
Tu.	10	9. 20. 51. 26	19. 30. 13, 5	21. 50. 44	8. 17, 7	23, 4
W.	11	9. 21. 52. 33	19. 34. 33, 5	21. 41. 11	8. 41, 1	22, 8
Th.	12	9. 22. 53. 40	19. 38. 52, 9	21. 31. 12	9. 3, 9	22, 1
F.	13	9. 23. 54. 46	19. 43. 11, 6	21. 20. 49	9. 26, 0	21, 4
Sa.	14	9. 24. 55. 51	19. 47. 29, 7	21. 10. 2	9. 47, 4	20, 8
Sun.	15	9. 25. 56. 56	19. 51. 47, 1	20. 58. 50	10. 8, 2	20, 1
M.	16	9. 26. 58. 0	19. 56. 3, 8	20. 47. 14	10. 28, 3	19, 4
Tu.	17	9. 27. 59. 4	20. 0. 19, 8	20. 35. 15	10. 47, 7	18, 7
W.	18	9. 29. 0. 8	20. 4. 35, 2	20. 22. 52	11. 6, 4	18, 0
Th.	19	10. 0. 1. 11	20. 8. 49, 8	20. 10. 6	11. 24, 4	17, 3
F.	20	10. 1. 2. 14	20. 13. 3, 6	19. 56. 57	11. 41, 7	16, 5
Sa.	21	10. 2. 3. 16	20. 17. 16, 7	19. 43. 26	11. 58, 2	15, 7
Sun.	22	10. 3. 4. 18	20. 21. 29, 0	19. 29. 33	12. 13, 9	15, 0
M.	23	10. 4. 5. 19	20. 25. 40, 6	19. 15. 18	12. 28, 9	14, 2
Tu.	24	10. 5. 6. 19	20. 29. 51, 4	19. 0. 43	12. 43, 1	13, 4
W.	25	10. 6. 7. 19	20. 34. 1, 4	18. 45. 46	12. 56, 5	12, 6
Th.	26	10. 7. 8. 18	20. 38. 10, 6	18. 30. 28	13. 9, 1	11, 8
F.	27	10. 8. 9. 16	20. 42. 19, 0	18. 14. 51	13. 20, 9	11, 0
Sa.	28	10. 9. 10. 13	20. 46. 26, 6	17. 58. 54	13. 31, 9	10, 1
Sun.	29	10. 10. 11. 9	20. 50. 33, 3	17. 42. 37	13. 42, 0	9, 3
M.	30	10. 11. 12. 3	20. 54. 39, 2	17. 26. 2	13. 51, 3	8, 5
Tu.	31	10. 12. 12. 56	20. 58. 44, 2	17. 9. 8	13. 59, 8	

Days	Time of ☉'s Semidiam. passg Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 10, 9	16. 19, 2	2. 32, 9	9. 992659	3. 1. 12
7	1. 10, 6	16. 19, 1	2. 32, 8	9. 992710	3. 0. 53
13	1. 10, 1	16. 18, 8	2. 32, 8	9. 992850	3. 0. 34
19	1. 9, 5	16. 18, 2	2. 32, 6	9. 993094	3. 0. 15
25	1. 8, 8	16. 17, 5	2. 32, 3	9. 993420	2. 29. 56

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Emersions.		*Emersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	3. 38. 5	3	21. 36. 11	3	23. 1. 11 Im.
2	22. 6. 14	7	10. 52. 29	4	2. 1. 31 E.
4	16. 34. 24	11	0. 8. 54	11	3. 0. 55 Im.
6	11. 2. 35	14	13. 25. 29	*11	6. 0. 11 E.
* 8	5. 30. 48	18	2. 42. 13	*18	7. 1. 11 Im.
9	23. 59. 3	21	15. 59. 5	18	9. 59. 21 E.
11	18. 27. 20	25	5. 16. 8	25	11. 1. 59 Im.
13	12. 55. 37	28	18. 33. 23	25	13. 59. 2 E.
*15	7. 23. 57				
17	1. 52. 19				
18	20. 20. 41				
20	14. 49. 5			IV. Satellite.	
22	9. 17. 31				
24	3. 46. 0			* 7	7. 8. 6 Im.
25	22. 14. 32			7	10. 52. 38 E.
27	16. 43. 5			24	1. 23. 2 Im.
29	11. 11. 42			24	5. 1. 0 E.
*31	5. 40. 20				

Days	THE PLANETS. Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
	☿ Gr. Elong. 27d. *MERCURY.*					
1	9.24. 2	6.30 S	9.15.29	2. 1 S	24.34 S	0.17
4	10. 3.38	6.50	9.20.25	2. 6	23.59	0.26
7	10.13.52	6.59	9.25.24	2. 7	23.10	0.34
10	10.24.51	6.55	10. 0.25	2. 4	22. 6	0.42
13	11. 6.46	6.33	10. 5.27	1.56	20.48	0.50
16	11.19.48	5.49	10.10.28	1.43	19.17	0.58
19	0. 4. 5	4.41	10.15.20	1.23	17.34	1. 4
22	0.19.42	3. 6	10.19.58	0.56	15.43	1. 9
25	1. 6.40	1. 8 S	10.24. 7	0.21 S	13.50	1.12
28	1.24.45	1. 5 N	10.27.31	0.21 N	12. 1	1.12
31	2.13.33	3.15	10.29.50	1. 9	10.28	1. 7
	♀ *VENUS.*					
1	6.13. 7	2.59 N	8. 5.58	1.45 N	19.37 S	21.27
7	6.22.48	2.40	8.13.20	1.31	20.55	21.32
13	7. 2.27	2.17	8.20.42	1.16	21.53	21.38
19	7.12. 4	1.50	8.28. 6	1. 0	22.28	21.44
25	7.21.39	1.20	9. 5.30	0.42	22.39	21.51
	♂ *MARS.*					
1	0.27.42	0.39 S	11.18.36	0.37 S	5. 5 S	4.28
7	1. 1.13	0.32	11.22.57	0.30	3.16	4.17
13	1. 4.43	0.26	11.27.18	0.23	1.26 S	4. 7
19	1. 8.10	0.19	0. 1.38	0.17	0.23 N	3.57
25	1.11.34	0.13	0. 5.57	0.11	2.12	3.48
	♃ *JUPITER.*					
1	11.19.20	1.14 S	11. 9.40	1. 8 S	9. 1 S	3.55
11	11.20.15	1.15	11.11.33	1. 7	8.16	3.19
21	11.21. 9	1.15	11.13.36	1. 6	7.28	2.44
	♄ *SATURN.*					
1	2.24.59	1. 8 S	2.22.58	1.16 S	22. 1 N	10.37
11	2.25.21	1. 7	2.22.16	1.14	22. 0	9.50
21	2.25.44	1. 6	2.21.40	1.13	22. 0	9. 5
	♅ *GEORGIAN.*					
1	5.10. 9	0.46 N	5.12.51	0.47 N	7.28 N	16. 4
11	5.10.16	0.46	5.12.41	0.48	7.32	15.20
21	5.10.24	0.46	5.12.25	0.48	7.39	14.36

Days of the Week.	Days of the Month.	THE MOON's ☽ Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sun.	1	10. 16. 49. 56	10. 22. 48. 58	3. 44. 58 S	4. 7. 4 S
M.	2	10. 28. 49. 59	11. 4. 53. 24	4. 26. 31	4. 43. 9
Tu.	3	11. 10. 59. 35	11. 17. 9. 0	4. 56. 41	5. 6. 57
W.	4	11. 23. 22. 2	11. 29. 39. 14	5. 13. 43	5. 16. 49
Th.	5	0. 6. 0. 57	0. 12. 27. 43	5. 16. 7	5. 11. 25
F.	6	0. 18. 59. 53	0. 25. 37. 53	5. 2. 41	4. 49. 48
Sa.	7	1. 2. 22. 0	1. 9. 12. 30	4. 32. 46	4. 11. 37
Sun.	8	1. 16. 9. 33	1. 23. 13. 7	3. 46. 26	3. 17. 28
M.	9	2. 0. 23. 8	2. 7. 39. 19	2. 44. 59	2. 9. 22
Tu.	10	2. 15. 1. 11	2. 22. 28. 11	1. 31. 10	0. 51. 0 S
W.	11	2. 29. 59. 26	3. 7. 34. 1	0. 9. 35 S	0. 32. 17 N
Th.	12	3. 15. 10. 49	3. 22. 48. 35	1. 13. 44 N	1. 53. 56
F.	13	4. 0. 26. 5	4. 8. 2. 2	2. 32. 2	3. 7. 16
Sa.	14	4. 15. 35. 9	4. 23. 4. 20	3. 38. 58	4. 6. 36
Sun.	15	5. 0. 28. 31	5. 7. 46. 55	4. 29. 45	4. 48. 10
M.	16	5. 14. 58. 49	5. 22. 3. 48	5. 1. 43	5. 10. 25
Tu.	17	5. 29. 1. 36	6. 5. 52. 8	5. 14. 22	5. 13. 44
W.	18	6. 12. 35. 30	6. 19. 11. 57	5. 8. 46	4. 59. 46
Th.	19	6. 25. 41. 48	7. 2. 5. 31	4. 47. 1	4. 30. 54
F.	20	7. 8. 23. 38	7. 14. 36. 38	4. 11. 42	3. 49. 47
Sa.	21	7. 20. 45. 13	7. 26. 49. 53	3. 25. 28	2. 59. 4
Sun.	22	8. 2. 51. 15	8. 8. 49. 58	2. 30. 56	2. 1. 19
M.	23	8. 14. 46. 32	8. 20. 41. 30	1. 30. 36	0. 59. 3 N
Tu.	24	8. 26. 35. 25	9. 2. 28. 39	0. 27. 0 N	0. 5. 15 S
W.	25	9. 8. 21. 44	9. 14. 14. 58	0. 37. 23 S	1. 9. 7
Th.	26	9. 20. 8. 45	9. 26. 3. 24	1. 40. 6	2. 10. 2
F.	27	10. 1. 59. 8	10. 7. 56. 13	2. 38. 36	3. 5. 32
Sa.	28	10. 13. 54. 51	10. 19. 55. 14	3. 30. 30	3. 53. 13
Sun.	29	10. 25. 57. 32	11. 2. 1. 54	4. 13. 26	4. 30. 51
M.	30	11. 8. 8. 30	11. 14. 17. 29	4. 45. 17	4. 56. 31
Tu.	31	11. 20. 29. 4	11. 26. 43. 23	5. 4. 20	5. 8. 38

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Paſſage Merid.	Right Aſcenſion.		Declination.	
				Noon.	*Midnight.*	*Noon.*	*Midnight.*
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Sun.	1	5	2.36	320.29	326.35	19.23 S	17.49 S
M.	2	6	3.21	332.35	338.31	16. 3	14. 7
Tu.	3	7	4. 5	344.23	350.12	12. 1	9.47
W.	4	8	4.48	356. 0	1.47	7.26	4.59 S
Th.	5	9	5.32	7.37	13.29	2.27 S	0. 9 N
F.	6	10	6.17	19.27	25.31	2.47 N	5.25
Sa.	7	11	7. 4	31.45	38.10	8. 2	10.36
Sun.	8	12	7.55	44.48	51.41	13. 5	15.25
M.	9	13	8.50	58.49	66.14	17.34	19.29
Tu.	10	14	9.50	73.55	81.51	21. 7	22.24
W.	11	15	10.54	89.59	98.16	23.18	23.47
Th.	12	16	11.58	106.38	114.58	23.49	23.24
F.	13	17	13. 1	123.14	131.19	22.33	21.17
Sa.	14	18	14. 1	139.12	146.50	19.39	17.43
Sun.	15	19	14.57	154.12	161.18	15.31	13. 7
M.	16	20	15.48	168. 9	174.46	10.33	7.54
Tu.	17	21	16.36	181.12	187.28	5.11 N	2.28 N
W.	18	22	17.21	193.35	199.37	0.14 S	2.54 S
Th.	19	23	18. 6	205.34	211.29	5.29	7.58
F.	20	24	18.50	217.23	223.18	10.21	12.35
Sa.	21	25	19.35	229.15	235.15	14.40	16.34
Sun.	22	26	20.22	241.19	247.27	18.17	19.48
M.	23	27	21.10	253.40	259.57	21. 6	22. 9
Tu.	24	28	21.59	266.18	272.42	22.58	23.32
W.	25	29	22.48	279. 9	285.37	23.49	23.51
Th.	26	30	23.36	292. 4	298.30	23.36	23. 5
F.	27	1	☌	304.53	311.13	22.19	21.17
Sa.	28	2	0.24	317.28	323.38	20. 1	18.32
Sun.	29	3	1.10	329.42	335.42	16.51	14.58
M.	30	4	1.55	341.37	347.28	12.56	10.45
Tu.	31	5	2.39	353.16	359. 3	8.26	6. 1

Days of the Week.	Days of the Month.	The Moon's Semidiameter.		The Moon's Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
Sun.	1	14. 49	14. 52	54. 24	54. 32	5197	5186
M.	2	14. 55	14. 58	54. 43	54. 56	5171	5154
Tu.	3	15. 2	15. 7	55. 11	55. 27	5134	5114
W.	4	15. 12	15. 17	55. 45	56. 5	5090	5064
Th.	5	15. 23	15. 30	56. 27	56. 52	5036	5004
F.	6	15. 37	15. 44	57. 18	57. 45	4971	4937
Sa.	7	15. 52	15. 59	58. 12	58. 40	4903	4869
Sun.	8	16. 7	16. 14	59. 8	59. 35	4834	4801
M.	9	16. 21	16. 28	60. 1	60. 26	4770	4740
Tu.	10	16. 34	16. 39	60. 48	61. 6	4714	4692
W.	11	16. 43	16. 45	61. 20	61. 30	4676	4664
Th.	12	16. 47	16. 47	61. 35	61. 36	4658	4657
F.	13	16. 46	16. 43	61. 31	61. 21	4663	4675
Sa.	14	16. 39	16. 34	61. 6	60. 48	4692	4714
Sun.	15	16. 28	16. 21	60. 26	60. 1	4740	4770
M.	16	16. 14	16. 6	59. 33	59. 5	4804	4838
Tu.	17	15. 58	15. 50	58. 35	58. 5	4875	4912
W.	18	15. 42	15. 34	57. 36	57. 9	4949	4983
Th.	19	15. 27	15. 20	56. 43	56. 18	5015	5048
F.	20	15. 14	15. 9	55. 55	55. 34	5077	5104
Sa.	21	15. 4	14. 59	55. 16	55. 0	5128	5149
Sun.	22	14. 55	14. 52	54. 46	54. 34	5167	5183
M.	23	14. 50	14. 48	54. 25	54. 17	5195	5206
Tu.	24	14. 46	14. 45	54. 11	54. 8	5214	5218
W.	25	14. 45	14. 45	54. 6	54. 6	5221	5221
Th.	26	14. 45	14. 46	54. 7	54. 10	5219	5215
F.	27	14. 46	14. 48	54. 13	54. 18	5211	5205
Sa.	28	14. 49	14. 51	54. 24	54. 31	5197	5187
Sun.	29	14. 54	14. 57	54. 40	54. 50	5175	5162
M.	30	15. 0	15. 3	55. 1	55. 13	5148	5132
Tu.	31	15. 6	15. 10	55. 26	55. 41	5115	5095

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	1	78. 51. 29	77. 24. 50	75. 58. 9	74. 31. 24	73. 4. 36	71. 37. 44	70. 10. 50	68. 43. 52
	2	67. 16. 51	65. 49. 46	64. 22. 39	62. 55. 28	61. 28. 15	60. 0. 59	58. 33. 40	57. 6. 20
	3	55. 38. 57	54. 11. 32	52. 44. 5	51. 16. 39	49. 49. 13	48. 21. 49	46. 54. 26	45. 27. 7
	4	43. 59. 50							
Aldebaran.	4	73. 12. 40	71. 39. 19	70. 5. 40	68. 31. 50	66. 57. 43	65. 23. 19	63. 48. 38	62. 13. 39
	5	60. 38. 23	59. 2. 48	57. 26. 53	55. 50. 39	54. 14. 5	52. 37. 11	50. 59. 57	49. 22. 22
	6	47. 44. 26	46. 6. 8	44. 27. 28	42. 48. 25	41. 9. 1	39. 29. 14	37. 49. 5	36. 8. 33
	7	34. 27. 39	32. 46. 21	31. 4. 41	29. 22. 40	27. 40. 18	25. 57. 35	24. 14. 34	22. 31. 14
	8	20. 47. 35							
Pollux.	8	64. 59. 42	63. 14. 53	61. 29. 40	59. 44. 3	57. 58. 0	56. 11. 32	54. 24. 41	52. 37. 26
	9	50. 49. 48	49. 1. 47	47. 13. 24	45. 24. 40	43. 35. 37	41. 46. 15	39. 56. 35	38. 6. 37
	10	36. 16. 24							
Regulus.	10	72. 0. 35	70. 9. 10	68. 17. 26	66. 25. 24	64. 33. 5	62. 40. 30	60. 47. 40	58. 54. 37
	11	57. 1. 20	55. 7. 51	53. 14. 13	51. 20. 25	49. 26. 28	47. 32. 25	45. 38. 18	43. 44. 7
	12	41. 49. 54	39. 55. 40	38. 1. 29	36. 7. 21	34. 13. 19	32. 19. 22	30. 25. 35	28. 32. 2
	13	26. 38. 44	24. 45. 43	22. 53. 4	21. 0. 49	19. 9. 2			
Spica ♍.	13	- - -	- - -	- - -	- - -	73. 7. 29	71. 14. 43	69. 22. 11	67. 29. 55
	14	65. 37. 56	63. 46. 15	61. 54. 53	60. 3. 52	58. 13. 13	56. 22. 58	54. 33. 7	52. 43. 41

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Spica ♍.	15	50. 54. 41	49. 6. 8	47. 18. 3	45. 30. 28	43. 43. 23	41. 56. 50	40. 10. 50	38. 25. 26
	16	36. 40. 37	34. 56. 23	33. 12. 50	31. 29. 59	29. 47. 53	28. 6. 35	26. 26. 7	24. 46. 31
	17	23. 7. 50							
Antares.	17	68. 30. 37	66. 48. 34	65. 6. 58	63. 25. 51	61. 45. 12	60. 5. 1	58. 25. 18	56. 46. 3
	18	55. 7. 15	53. 28. 55	51. 51. 2	50. 13. 36	48. 36. 38	47. 0. 7	45. 24. 3	43. 48. 26
	19	42. 13. 16	40. 38. 33	39. 4. 18	37. 30. 29	35. 57. 8			
The Sun.	16	- - -	- - -	- - -	- - -	- - -	- - -	- - -	120. 25. 9
	17	118. 49. 31	117. 14. 21	115. 39. 37	114. 5. 20	112. 31. 30	110. 58. 7	109. 25. 10	107. 52. 39
	18	106. 20. 33	104. 48. 53	103. 17. 38	101. 46. 47	100. 16. 20	98. 46. 18	97. 16. 40	95. 47. 22
	19	94. 18. 29	92. 49. 58	91. 21. 47	89. 53. 58	88. 26. 29	86. 59. 20	85. 32. 30	84. 5. 59
	20	82. 39. 47	81. 13. 54	79 48. 17	78. 22. 57	76. 57. 54	75. 33. 6	74. 8. 31	72. 44. 12
	21	71. 20. 7	69. 56. 17	68. 32. 38	67. 9. 13	65. 46. 0	64. 22. 59	63. 0. 8	61. 37. 27
	22	60. 14. 57	58. 52. 36	57. 30. 22	56. 8. 17	54. 46. 21	53. 24. 33	52. 2. 51	50. 41. 16
	23	49. 19. 48	47. 58. 26	46. 37. 9	49. 15. 58	43. 54. 51	42. 33. 49	41. 12. 50	39. 51. 54
	24	38. 31. 2							
α Arietis.	29	- - -	- - -	- - -	- - -	64. 11. 21	62. 43. 38	61. 15. 54	59. 48. 8
	30	58. 20. 22	56. 52. 36	55. 24. 50	53. 57. 6	52. 29. 23	51. 1. 41	49. 34. 3	48. 6. 30
	31	46. 39. 2	45. 11. 40	43. 44. 28	42. 17. 26	40. 50. 38	39. 24. 5	37. 57. 49	36. 31. 54
	F. 1	35. 6. 16							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	- - -	- - -	- - -	- - -	40. 47. 47	42. 10. 7	43. 32. 33	44. 55. 7
	2	46. 17. 47	47. 40. 36	49. 3. 33	50. 26. 39	51. 49. 53	53. 13. 17	54. 36. 50	56. 0. 35
	3	57. 24. 29	58. 48. 35	60. 12. 53	61. 37. 24	63. 2. 6	64. 27. 1	65. 52. 9	67. 17. 31
	4	68. 43. 8	70. 9. 1	71. 35. 9	73. 1. 33	74. 28. 13	75. 55. 10	77. 22. 24	78. 49. 56
	5	80. 17. 47	81. 45. 56	83. 14. 26	84. 43. 15	86. 12. 24	87. 41. 53	89. 11. 44	90. 41. 57
	6	92. 12. 31	93. 43. 29	95. 14. 49	96. 46. 33	98. 18. 40	99. 51. 11	101. 24. 6	102. 57. 26
	7	104. 31. 10	106. 5. 20	107. 39. 56	109. 14. 57	110. 50. 24	112. 26. 17	114. 2. 36	115. 39. 21
	8	117. 16. 32	118. 54. 9	120. 32. 12					
Fomalhaut.	6	49. 12. 7	50. 43. 40	52. 15. 52	53. 48. 42	55. 22. 11	56. 56. 18	58. 30. 59	60. 6. 15
	7	61. 42. 8	63. 18. 34	64. 55. 33	66. 33. 5	68. 11. 10	69. 49. 47	71. 28. 55	73. 8. 34
	8	74. 48. 43	76. 29. 21	78. 10. 27	79. 52. 2	81. 34. 5	83. 16. 36	84. 59. 32	86. 42. 55
	9	88. 26. 45							
α Arietis.	9	28. 27. 28	30. 1. 16	31. 36. 43	33. 13. 41	34. 52. 6	36. 31. 52	38. 12. 46	39. 54. 48
	10	41. 37. 54	43. 21. 47	45. 6. 28	46. 51. 54	48. 38. 5	50. 24. 52	52. 12. 11	53. 59. 59
	11	55. 48. 13							
Aldebaran.	11	23. 36. 36	25. 29. 25	27. 22. 31	29. 15. 54	31. 9. 32	33. 3. 25	34. 57. 25	36. 51. 34
	12	38. 45. 53	40. 40. 15	42. 34. 40	44. 29. 6	46. 23. 36	48. 18. 3	50. 12. 26	52. 6. 46
	13	54. 1. 4	55. 55. 14	57. 49. 14	59. 43. 4	61. 36. 47	63. 30. 18	65. 23. 33	67. 16. 33
	14	69. 9. 19							

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	14	25. 14. 14	27. 4. 50	28. 55. 18	30. 45. 38	32. 35. 53	34. 25. 57	36. 15. 45	38. 5. 18
	15	39. 54. 38	41. 43. 37	43. 32. 15	45. 20. 32	47. 8. 30	48. 56. 5	50. 43. 14	52. 29. 59
	16	54. 16. 19							
Regulus.	16	18. 31. 2	20. 15. 26	21. 59. 37	23. 43. 35	25. 27. 20	27. 10. 48	28. 53. 57	30. 36. 47
	17	32. 19. 19	34. 1. 25	35. 43. 7	37. 24. 26	39. 5. 23	40. 45. 55	42. 26. 2	44. 5. 46
	18	45. 45. 6	47. 24. 2	49. 2. 34	50. 40. 44	52. 18. 30	53. 55. 53	55. 32. 55	57. 9. 34
	19	58. 45. 51	60. 21. 47	61. 57. 22	63. 32. 37	65. 7. 31	66. 42. 7	68. 16. 24	69. 50. 22
	20	71. 24. 2	72. 57. 24	74. 30. 30	76. 3. 19	77. 35. 51			
Spica ♍.	20	- - -	- - -	- - -	- - -	24. 18. 33	25. 47. 16	27. 16. 3	28. 44. 54
	21	30. 13. 51	31. 42. 50	33. 11. 48	34. 40. 45	36. 9. 43	37. 38. 36	39. 7. 27	40. 36. 14
	22	42. 4. 58	43. 33. 38	45. 2. 14	46. 30. 47	47. 59. 16	49. 27. 41	50. 56. 2	52. 24. 20
	23	53. 52. 34	55. 20. 45	56. 48. 54	58. 16. 59	59. 45. 5	61. 13. 7	62. 41. 8	64. 9. 7
	24	65. 37. 5							
Antares.	24	20. 16. 26	21. 40. 24	23. 4. 47	24. 29. 36	25. 54. 49	27. 20. 24	28. 46. 14	30. 12. 20
	25	31. 38. 43	33. 5. 13	34. 31. 52	35. 58. 41	37. 25. 41	38. 52. 49	40. 20. 4	41. 47. 24
	26	43. 14. 53							
The Sun.	31	38. 33. 9	39. 58. 9	41. 23. 21	42. 48. 44	44. 14. 19	45. 40. 6	47. 6. 5	48. 32. 17
	F. 1	49. 58. 41							

CONFIGURATIONS of the SATELLITES of JUPITER at VI o'Clock *in the Evening.*

| | | |

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.
W.	1	
Th.	2	*Purif. of B. V. Mary.*
F.	3	Blas. On mort. of Purif.
Sa.	4	[3 ret.
Sun.	5	*5th Sunday after Epiph.*
M.	6	[Agatha.
Tu.	7	
W.	8	
Th.	9	In 8 days of Purif. 4 ret.
F.	10	
Sa.	11	
Sun.	12	*Septuagesima Sunday.*
M.	13	Hilary Term ends.
Tu.	14	Valentine.
W.	15	
Th.	16	
F.	17	
Sa.	18	
Sun.	19	*Sexagesima Sunday.*
M.	20	
Tu.	21	
W.	22	
Th.	23	Camb. Term divides, n.
F.	24	*St. Matthias. Pr. Adel.*
Sa.	25	[*Fred. born.*
Sun.	26	*Quinquagesima Sunday.*
M.	27	
Tu.	28	

Phases of the MOON.

	D. H. M.
☽ *First Quarter* ---	4. 8. 7
○ Full Moon -----	10. 23. 42
☾ *Last Quarter* ----	18. 2. 25
● New Moon -----	26. 7. 32

Other *Phenomena.*

D. H. M.	
2. - -	☿ Stationary.
5. 17. 12	☽ ε ♉
6. 7. 22	☽ ι ♉
6. 19. 12	☽ ♄
6. 20. 44	☽ ζ ♉
7. 11. 2	☽ η ♊
7. 14. 4	☽ μ ♊
9. - -	♂ ζ ♓, ✱ 16′ S.
9. 17. 59	☽ γ ♋
10. - -	♅ χ ♌, ✱ 33′ N.
11. 2. 28	☽ η ♌
12. 10. 18	☽ ι ♌
13. 12. 40	☽ c ♍
17. 10. 13	☽ 4 ad ζ ♎
17. 14. 18	☉ enters ♓
17. 14. 45	☽ η ♎
17. 19. 37	☽ θ ♎
18. 4. 59	☽ ν ♏
19. 13. 23	☽ ρ Ophiuchi.
20. - -	♄ Stationary.
25. - -	☿ Stationary.

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. South.	Equation of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
W.	1	10. 13. 13. 48	21. 2. 48, 6	16. 51. 57	14. 7, 5	6, 8
Th.	2	10. 14. 14. 38	21. 6. 51, 7	16. 34. 28	14. 14, 3	5, 9
F.	3	10. 15. 15. 27	21. 10. 54, 2	16. 16. 41	14. 20, 2	5, 1
Sa.	4	10. 16. 16. 14	21. 14. 55, 9	15. 58. 38	14. 25, 3	4, 3
Sun.	5	10. 17. 16. 59	21. 18. 56, 7	15. 40. 19	14. 29, 6	3, 4
M.	6	10. 18. 17. 43	21. 22. 56, 7	15. 21. 43	14. 33, 0	2, 6
Tu.	7	10. 19. 18. 25	21. 26. 55, 9	15. 2. 52	14. 35, 6	1, 8
W.	8	10. 20. 19. 6	21. 30. 54, 3	14. 43. 47	14. 37, 4	1, 1
Th.	9	10. 21. 19. 45	21. 34. 51, 9	14. 24. 26	14. 38, 5	0, 2
F.	10	10. 22. 20. 22	21. 38. 48, 7	14. 4. 51	14. 38, 7	0, 6
Sa.	11	10. 23. 20. 57	21. 42. 44, 6	13. 45. 3	14. 38, 1	1, 4
Sun.	12	10. 24. 21. 31	21. 46. 39, 8	13. 25. 0	14. 36, 7	2, 1
M.	13	10. 25. 22. 4	21. 50. 34, 3	13. 4. 45	14. 34, 6	2, 8
Tu.	14	10. 26. 22. 35	21. 54. 28, 0	12. 44. 17	14. 31, 8	3, 5
W.	15	10. 27. 23. 5	21. 58. 21, 1	12. 23. 37	14. 28, 3	4, 2
Th.	16	10. 28. 23. 33	22. 2. 13, 4	12. 2. 45	14. 24, 1	4, 9
F.	17	10. 29. 24. 0	22. 6. 5, 0	11. 41. 41	14. 19, 2	5, 7
Sa.	18	11. 0. 24. 26	22. 9. 55, 9	11. 20. 26	14. 13, 5	6, 4
Sun.	19	11. 1. 24. 50	22. 13. 46, 1	10. 59. 1	14. 7, 1	7, 0
M.	20	11. 2. 25. 13	22. 17. 35, 9	10. 37. 25	14. 0, 1	7, 5
Tu.	21	11. 3. 25. 35	22. 21. 24, 9	10. 15. 39	13. 52, 6	8, 1
W.	22	11. 4. 25. 56	22. 25. 13, 2	9. 53. 44	13. 44, 5	8, 7
Th.	23	11. 5. 26. 15	22. 29. 1, 1	9. 31. 40	13. 35, 8	9, 3
F.	24	11. 6. 26. 32	22. 32. 48, 3	9. 9. 27	13. 26, 5	9, 9
Sa.	25	11. 7. 26. 47	22. 36. 34, 9	8. 47. 6	13. 16, 6	10, 4
Sun.	26	11. 8. 27. 1	22. 40. 20, 9	8. 24. 37	13. 6, 2	11, 0
M.	27	11. 9. 27. 13	22. 44. 6, 4	8. 2. 1	12. 55, 2	11, 6
Tu.	28	11. 10. 27. 23	22. 47. 51, 4	7. 39. 18	12. 43, 6	

Days	Time of ☉'s Semidiam. passs Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 8,0	16. 16,5	2. 32,1	9.993862	2.29.33
7	1. 7,4	16. 15,5	2. 31,8	9.994299	2.29.14
13	1. 6,7	16. 14,3	2. 31,4	9.994815	2.28.55
19	1. 6,1	16. 13,0	2. 31,0	9.995406	2.28.36
25	1. 5,6	16. 11,6	2. 30,5	9.996044	2.28.17

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Emersions.		*Emersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	0. 9. 1	1	7.50.36	1	15. 3.24 Im.
3	18.37.43	4	21. 8.11	1	17.59.22 E.
5	13. 6.27	8	10.25.56	8	19. 5.23 Im.
7	7.35.14	11	23.43.53	8	22. 0.15 E.
9	2. 4. 3				
10	20.32.55				
12	15. 1.49				

IV. Satellite.	
9	19.41. 9 Im.
9	23.12.36 E.

Days	THE PLANETS Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
	☿		*MERCURY.*		Inf. ♂ 12d. 2h.	
1	2. 19. 52	3. 55 N	11. 0. 18	1. 26 N	10. 2 S	1. 4
4	3. 8. 39	5. 35	11. 0. 39	2. 16	9. 8	0. 52
7	3. 26. 41	6. 37	10. 29. 23	3. 1	8. 52	0. 35
10	4. 13. 31	7. 0	10. 26. 46	3. 32	9. 17	0. 12
13	4. 28. 56	6. 49	10. 23. 26	3. 44	10. 12	23. 40
16	5. 12. 55	6. 15	10. 20. 9	3. 35	11. 23	23. 17
19	5. 25. 37	5. 24	10. 17. 34	3. 9	12. 35	22. 57
22	6. 7. 13	4. 24	10. 16. 2	2. 34	13. 36	22. 42
25	6. 17. 53	3. 18	10. 15. 34	1. 54	14. 22	22. 31
28	6. 27. 49	2. 11	10. 16. 4	1. 14	14. 53	22. 24
	♀		*VENUS.*			
1	8. 2. 48	0. 42 N	9. 14. 9	0. 22 N	22. 21 S	22. 0
7	8. 12. 21	0. 9 N	9. 21. 35	0. 4 N	21. 40	22. 7
13	8. 21. 52	0. 25 S	9. 29. 0	0. 12 S	20. 35	22. 15
19	9. 1. 22	0. 58	10. 6. 26	0. 28	19. 8	22. 23
25	9. 10. 51	1. 29	10. 13. 52	0. 43	17. 22	22. 31
	♂		*MARS.*			
1	1. 15. 31	0. 5 S	0. 10. 59	0. 4 S	4. 17 N	3. 37
7	1. 18. 52	0. 1 N	0. 15. 16	0. 1 N	6. 2	3. 29
13	1. 22. 10	0. 8	0. 19. 32	0. 6	7. 45	3. 21
19	1. 25. 26	0. 14	0. 23. 48	0. 11	9. 25	3. 14
25	1. 28. 41	0. 20	0. 28. 2	0. 16	11. 2	3. 7
	♃		*JUPITER.*			
1	11. 22. 10	1. 16 S	11. 15. 59	1. 5 S	6. 32 S	2. 7
11	11. 23. 4	1. 16	11. 18. 16	1. 5	5. 38	1. 36
21	11. 23. 59	1. 16	11. 20. 36	1. 4	4. 43	1. 6
	♄		*SATURN.*			
1	2. 26. 8	1. 5 S	2. 21. 11	1. 10 S	22. 0 N	8. 18
11	2. 26. 31	1. 5	2. 20. 56	1. 8	22. 1	7. 37
21	2. 26. 53	1. 4	2. 20. 52	1. 6	22. 3	6. 58
	♅		*GEORGIAN.*		♂ 28d. 10h¾.	
1	5. 10. 33	0. 46 N	5. 12. 3	0. 48 N	7. 48 N	13. 50
11	5. 10. 41	0. 46	5. 11. 39	0. 48	7. 57	13. 9
21	5. 10. 49	0. 46	5. 11. 14	0. 49	8. 7	12. 29

Days of the Week.	Days of the Month.	The Moon's Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
W.	1	0. 3. 0. 45	0. 9. 21. 19	5. 9. 14 S	5. 6. 3 S
Th.	2	0. 15. 45. 23	0. 22. 13. 13	4. 59. 2	4. 48. 10
F.	3	0. 28. 45. 5	1. 5. 21. 20	4. 33. 28	4. 14. 57
Sa.	4	1. 12. 2. 9	1. 18. 47. 53	3. 52. 47	3. 27. 6
Sun.	5	1. 25. 38. 40	2. 2. 34. 45	2. 58. 9	2. 26. 12
M.	6	2. 9. 36. 8	2. 16. 42. 53	1. 51. 41	1. 14. 59 S
Tu.	7	2. 23. 54. 48	3. 1. 11. 38	0. 36. 41 S	0. 2. 37 N
W.	8	3. 8. 32. 59	3. 15. 58. 14	0. 42. 15 N	1. 21. 27
Th.	9	3. 23. 26. 38	4. 0. 57. 17	1. 59. 29	2. 35. 36
F.	10	4. 8. 29. 7	4. 16. 1. 0	3. 9. 2	3. 39. 8
Sa.	11	4. 23. 31. 44	5. 1. 0. 4	4. 5. 18	4. 27. 6
Sun.	12	5. 8. 24. 54	5. 15. 45. 10	4. 44. 12	4. 56. 24
M.	13	5. 22. 59. 55	6. 0. 8. 29	5. 3. 39	5. 6. 1
Tu.	14	6. 7. 10. 17	6. 14. 4. 56	5. 3. 41	4. 56. 57
W.	15	6. 20. 52. 21	6. 27. 32. 35	4. 46. 5	4. 31. 30
Th.	16	7. 4. 5. 50	7. 10. 32. 23	4. 13. 33	3. 52. 38
F.	17	7. 16. 52. 44	7. 23. 7. 26	3. 29. 10	3. 3. 30
Sa.	18	7. 29. 17. 4	8. 5. 22. 16	2. 36. 2	2. 7. 5
Sun.	19	8. 11. 23. 46	8. 17. 22. 10	1. 37. 1	1. 6. 8
M.	20	8. 23. 18. 14	8. 29. 12. 34	0. 34. 45 N	0. 3. 10 N
Tu.	21	9. 5. 5. 52	9. 10. 58. 42	0. 28. 20 S	0. 59. 27 S
W.	22	9. 16. 51. 42	9. 22. 45. 21	1. 29. 55	1. 59. 25
Th.	23	9. 28. 40. 10	10. 4. 36. 34	2. 27. 41	2. 54. 26
F.	24	10. 10. 34. 54	10. 16. 35. 29	3. 19. 20	3. 42. 10
Sa.	25	10. 22. 38. 34	10. 28. 44. 18	4. 2. 36	4. 20. 23
Sun.	26	11. 4. 52. 53	11. 11. 4. 19	4. 35. 17	4. 47. 1
M.	27	11. 17. 18. 43	11. 23. 36. 3	4. 55. 26	5. 0. 18
Tu.	28	11. 29. 56. 18	0. 6. 19. 27	5. 1. 32	4. 58. 59

Days of the Week.	Days of the Month.	THE MOON'S Age.	Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
W.	1	6	3.23	4.49	10.36	3.32 S	0.59 S
Th.	2	7	4. 7	16.26	22.20	1.36 N	4.12 N
F.	3	8	4.52	28.21	34.30	6.47	9.19
Sa.	4	9	5.40	40.49	47.19	11.46	14. 7
Sun.	5	10	6.32	54. 3	61. 1	16.18	18.18
M.	6	11	7.28	68.14	75.42	20. 4	21.33
Tu.	7	12	8.28	83.24	91.18	22.43	23.30
W.	8	13	9.31	99.21	107.30	23.53	23.51
Th.	9	14	10.34	115.40	123.48	23.23	22.30
F.	10	15	11.36	131.48	139.38	21.12	19.32
Sa.	11	16	12.35	147.16	154.41	17.33	15.17
Sun.	12	17	13.30	161.52	168.50	12.49	10.10
M.	13	18	14.21	175.35	182.10	7.26	4.37 N
Tu.	14	19	15. 9	188.35	194.53	1.48 N	1. 0 S
W.	15	20	15.56	201. 4	207.12	3.44 S	6.23
Th.	16	21	16.42	213.17	219.21	8.55	11.19
F.	17	22	17.29	225.26	231.32	13.33	15.37
Sa.	18	23	18.16	237.40	243.51	17.29	19. 8
Sun.	19	24	19. 4	250. 5	256.23	20.34	21.46
M.	20	25	19.53	262.44	269. 8	22.43	23.25
Tu.	21	26	20.42	275.34	282. 2	23.50	24. 0
W.	22	27	21.31	288.29	294.56	23.53	23.30
Th.	23	28	22.20	301.21	307.42	22.51	21.57
F.	24	29	23. 7	314. 0	320.14	20.48	19.25
Sa.	25	30	23.53	326.23	332.27	17.48	15.59
Sun.	26	1	0	338.27	344.24	14. 0	11.50
M.	27	2	0.38	350.17	356. 8	9.33	7. 8
Tu.	28	3	1.22	1.57	7.47	4.38	2. 4

Days of the Week.	Days of the Month.	THE MOON's Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
W.	1	15. 15	15. 19	55. 57	56. 14	5075	5053
Th.	2	15. 24	15. 29	56. 32	56. 51	5029	5005
F.	3	15. 35	15. 41	57. 11	57. 32	4980	4953
Sa.	4	15. 47	15. 53	57. 55	58. 19	4924	4895
Sun	5	16. 0	16. 6	58. 42	59. 5	4866	4838
M.	6	16. 12	16. 18	59. 28	59. 50	4810	4783
Tu.	7	16. 24	16. 29	60. 10	60. 28	4759	4737
W.	8	16. 33	16. 36	60. 43	60. 56	4719	4704
Th.	9	16. 39	16. 40	61. 5	61. 9	4693	4689
F.	10	16. 40	16. 38	61. 8	61. 3	4690	4696
Sa.	11	16. 36	16. 32	60. 54	60. 41	4707	4722
Sun.	12	16. 28	16. 22	60. 24	60. 4	4742	4766
M.	13	16. 16	16. 9	59. 41	59. 15	4794	4826
Tu.	14	16. 1	15. 53	58. 47	58. 19	4860	4895
W.	15	15. 46	15. 38	57. 50	57. 22	4931	4966
Th.	16	15. 31	15. 24	56. 55	56. 29	5000	5033
F.	17	15. 17	15. 11	56. 5	55. 43	5064	5093
Sa.	18	15. 6	15. 1	55. 23	55. 6	5119	5141
Sun.	19	14. 57	14. 54	54. 51	54. 39	5161	5177
M.	20	14. 51	14. 49	54. 29	54. 21	5190	5201
Tu.	21	14. 47	14. 46	54. 16	54. 13	5207	5211
W.	22	14. 46	14. 47	54. 13	54. 15	5211	5209
Th.	23	14. 48	14. 49	54. 18	54. 23	5205	5198
F.	24	14. 51	14. 53	54. 29	54. 37	5190	5179
Sa.	25	14. 55	14. 58	54. 46	54. 56	5167	5154
Sun.	26	15. 1	15. 4	55. 7	55. 19	5140	5124
M.	27	15. 8	15. 12	55. 32	55. 46	5107	5089
Tu.	28	15. 16	15. 19	56. 0	56. 14	5071	5053

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	1	63. 37. 51	62. 3. 37	60. 29. 11	58. 54. 32	57. 19. 41	55. 44. 37	54. 9. 19	52. 33. 48
	2	50. 58. 4	49. 22. 5	47. 45. 52	46. 9. 25	44. 32. 43	42. 55. 47	41. 18. 35	39. 41. 9
	3	38. 3. 27	36. 25. 29	34. 47. 17	33. 8. 49	31. 30. 6	29. 51. 9	28. 11. 57	26. 32. 30
	4	24. 52. 51							
Pollux.	4	69. 4. 35	67. 24. 5	65. 43. 15	64. 2. 7	62. 20. 39	60. 38. 52	58. 56. 45	57. 14. 19
	5	55. 31. 33	53. 48. 26	52. 5. 0	50. 21. 14	48. 37. 10	46. 52. 47	45. 8. 5	43. 23. 5
	6	41. 37. 47							
Regulus.	6	77. 25. 56	75. 39. 39	73. 53. 2	72. 6. 5	70. 18. 48	68. 31. 11	66. 43. 15	64. 54. 59
	7	63. 6. 25	61. 17. 32	59. 28. 21	57. 38. 53	55. 49. 8	53. 59. 7	52. 8. 51	50. 18. 20
	8	48. 27. 36	46. 36. 39	44. 45. 30	42. 54. 11	41. 2. 43	39. 11. 5	37. 19. 21	35. 27. 32
	9	33. 35. 39	31. 43. 41	29. 51. 44	27. 59. 49	26. 8. 1	24. 16. 21	22. 24. 52	30. 33. 38
	10	18. 42. 37							
Spica ♍.	10	72. 40. 48	70. 48. 36	68. 56. 27	67. 4. 23	65. 12. 26	63. 20. 36	61. 28. 55	59. 37. 25
	11	57. 46. 6	55. 55. 1	54. 4. 11	52. 13. 38	50. 23. 21	48. 33. 22	46. 43. 44	44. 54. 27
	12	43. 5. 34	41. 17. 5	39. 29. 3	37. 41. 30	35. 54. 28	34. 7. 56	32. 22. 0	30. 36. 44
	13	28. 52. 10	27. 8. 23	25. 25. 24	23. 43. 19	22. 2. 7			

Stars Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	13	- - -	- - -	- - -	- - -	67. 23. 42	65. 38. 49	63. 54. 24	62. 10. 26
	14	60. 26. 56	58. 43. 54	57. 1. 21	55. 19. 15	53. 37. 39	51. 56. 30	50. 15. 51	48. 35. 40
	15	46. 55. 59	45. 16. 48	43. 38. 8	41. 59. 57	40. 22. 17	38. 45. 8	37. 8. 30	35. 32. 24
	16	33. 56. 48							
α Aquilæ.	16	83. 24. 4	82. 1. 41	80. 39. 45	79. 18. 15	77. 57. 13	76. 36. 39	75. 16. 35	73. 57. 1
	17	72. 37. 57	71. 19. 25	70. 1. 26	68. 44. 0	67. 27. 7	66. 10. 50	64. 55. 9	63. 40. 4
	18	62. 25. 36							
The Sun.	15	- - -	- - -	- - -	- - -	120. 14. 29	118. 43. 37	117. 13. 11	115. 43. 8
	16	114. 13. 30	112. 44. 15	111. 15. 23	109. 46. 53	108. 18. 47	106. 51. 2	105. 23. 38	103. 56. 34
	17	102. 29. 51	101. 3. 28	99. 37. 24	98. 11. 38	96. 46. 12	95. 21. 4	93. 56. 12	92. 31. 36
	18	91. 7. 18	89. 43. 16	88. 19. 27	86. 55. 53	85. 32. 33	84. 9. 26	82. 46. 31	81. 23. 49
	19	80. 1. 18	78. 39. 0	77. 16. 51	75. 54. 52	74. 33. 2	73. 11. 21	71. 49. 48	70. 28. 21
	20	69. 7. 3	67. 45. 52	66. 24. 46	65. 3. 45	63. 42. 50	62. 21. 59	61. 1. 12	59. 40. 28
	21	58. 19. 48	56. 59. 10	55. 38. 34	54. 18. 0	52. 57. 27	51. 36. 55	50. 16. 22	48. 55. 50
	22	47. 35. 18	46. 14. 45	44. 54. 11	43. 33. 37	42. 13. 2	40. 52. 25	39. 31. 45	
Aldebaran.	28	66. 41. 37	65. 6. 41	63. 31. 35	61. 56. 19	60. 20. 52	58. 45. 14	57. 9. 27	55. 33. 28
	M. 1	53. 57. 19							

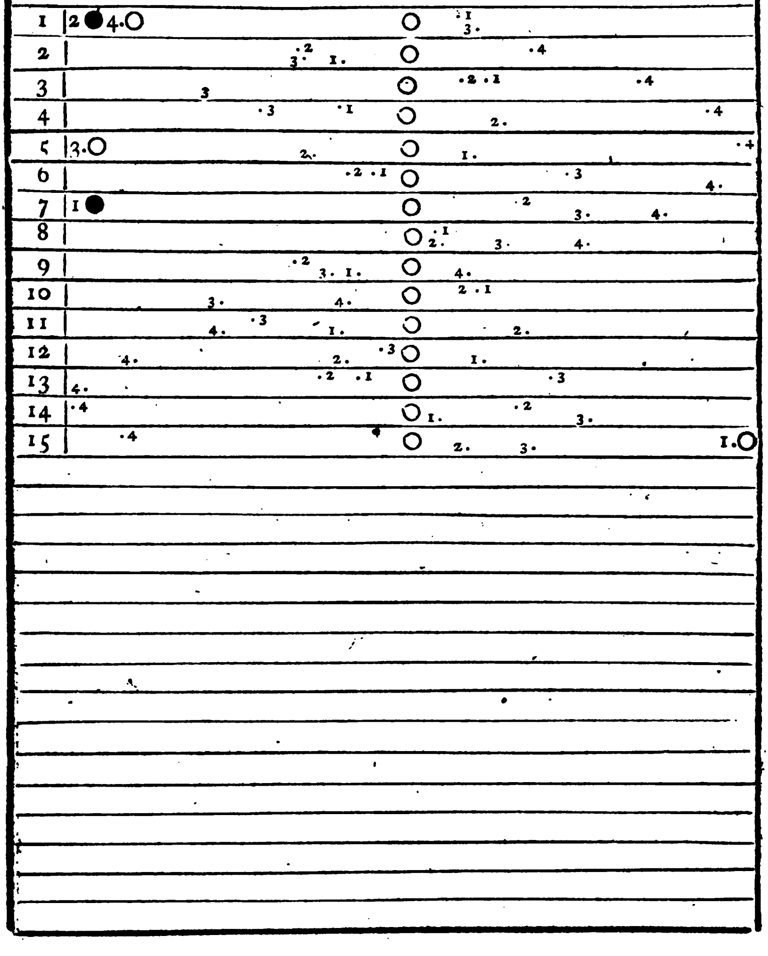
DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	49. 58. 41	51. 25. 17	52. 52. 6	54. 19. 9	55. 46. 25	57. 13. 54	58. 41. 38	60. 9. 36
	2	61. 37. 48	63. 6. 15	64. 34. 59	66. 3. 57	67. 33. 11	69. 2. 41	70. 32. 27	72. 2. 31
	3	73. 32. 51	75. 3. 29	76. 34. 26	78. 5. 40	79. 37. 13	81. 9. 4	82. 41. 13	84. 13. 42
	4	85. 46. 30	87. 19. 38	88. 53. 7	90. 26. 55	92. 1. 4	93. 35. 32	95. 10. 21	96. 45. 30
	5	98. 21. 0	99. 56. 52	101. 33. 5	103. 9. 39	104. 46. 34	106. 23. 50	108. 1. 26	109. 39. 24
	6	111. 17. 42	112. 56. 22	114. 35. 22	116. 14. 42	117. 54. 22	119. 34. 22	121. 14. 41	
α Pegasi.	4	- - -	- - -	- - -	- - -	61. 31. 23	63. 1. 46	64. 32. 44	66. 4. 20
	5	67. 36. 34	69. 9. 21	70. 42. 42	72. 16. 34	73. 50. 59	75. 25. 53	77. 1. 14	78. 37. 2
	6	80. 13. 19	81. 50. 1	83. 27. 5	85. 4. 33	86. 42. 24			
α Arietis.	6	- - -	- - -	- - -	- - -	43. 10. 56	44. 51. 55	46. 33. 33	48. 15. 52
	7	49. 58. 51	51. 42. 27	53. 26. 33	55. 11. 12	56. 56. 23	58. 42. 3	60. 28. 5	62. 14. 33
	8	64. 1. 26	65. 48. 42	67. 36. 15	69. 24. 7	71. 12. 18			
Aldebaran.	8	- - -	- - -	- - -	- - -	39. 33. 58	41. 25. 43	43. 17. 40	45. 9. 49
	9	47. 2. 6	48. 54. 33	50. 47. 6	52. 39. 45	54. 32. 30	56. 25. 19	58. 18. 9	60. 11. 1
	10	62. 3. 54	63. 56. 46	65. 49. 34	67. 42. 19	69. 35. 1	71. 27. 37	73. 20. 5	75. 12. 24
	11	77. 4. 36							

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	11	33. 3. 12	34. 54. 7	36. 44. 55	38. 35. 36	40. 26. 11	42. 16. 36	44. 6. 47	45. 56. 46
	12	47. 46. 33	49. 36. 3	51. 25. 15	53. 14. 9	55. 2. 46	56. 51. 3	58. 38. 58	60. 26. 32
	13	62. 13. 45							
Regulus.	13	26. 21. 13	28. 7. 27	29. 53. 22	31. 38. 58	33. 24. 15	35. 9. 12	36. 53. 46	38. 37. 57
	14	40. 21. 47	42. 5. 11	43. 48. 11	45. 30. 47	47. 12. 58	48. 54. 44	50. 36. 5	52. 17. 2
	15	53. 57. 33	55. 37. 39	57. 17. 20	58. 56. 36	60. 35. 28	62. 13. 55	63. 51. 58	65. 29. 38
	16	67. 6. 53	68. 43. 45	70. 20. 14	71. 56. 21	73. 32. 4			
Spica ♍	16	- - -	- - -	- - -	- - -	20. 23. 42	21. 54. 8	23. 24. 44	24. 55. 29
	17	26. 26. 24	27. 57. 23	29. 28. 20	30. 59. 17	32. 30. 14	34. 1. 0	35. 31. 39	37. 2. 11
	18	38. 32. 36	40. 2. 51	41. 32. 57	43. 2. 55	44. 32. 44	46. 2. 24	47. 31. 55	49. 1. 18
	19	50. 30. 33	51. 59. 39	53. 28. 38	54. 57. 30	56. 26. 15	57. 54. 54	59. 23. 26	60. 51. 54
	20	62. 20. 15	63. 48. 32	65. 16. 44	66. 44. 52	68. 12. 56			
Antares.	20	- - -	- - -	- - -	- - -	22. 43. 47	24. 8. 56	25. 34. 21	26. 59. 58
	21	28. 25. 52	29. 52. 0	31. 18. 18	32. 44. 47	34. 11. 27	35. 38. 14	37. 5. 8	38. 32. 11
	22	39. 59. 21	41. 26. 37	42. 54. 0	44. 21. 30	45. 49. 7	47. 16. 51	48. 44. 41	50. 12. 39
	23	51. 40. 44	53. 8. 56	54. 37. 16	56. 5. 43	57. 34. 18	59. 3. 1	60. 31. 52	62. 0. 50
	24	63. 29. 57	64. 59. 12	66. 28. 36	67. 58. 9	69. 27. 50			

CONFIGURATIONS of the SATELLITES of JUPITER

at Half an Hour paſt V o'Clock *in the Evening*.



Days of the Week.	Days of the Month.	*Sundays, Holidays, Terms, &c.*
W.	1	*Ash-Wednesday.* David.
Th.	2	Chad.
F.	3	
Sa.	4	
Sun.	5	*1st Sunday in Lent.*
M.	6	
Tu.	7	Perpetua.
W.	8	
Th.	9	
F.	10	
Sa.	11	
Sun.	12	*2d Su. in Lent.* Greg. M.
M.	13	
Tu.	14	
W.	15	
Th.	16	
F.	17	
Sa.	18	Edw. K. of West-Sax.
Sun.	19	*3d Sunday in Lent.*
M.	20	
Tu.	21	Benedict.
W.	22	
Th.	23	
F.	24	
Sa.	25	*Annun. of B. V. Mary.*
Sun.	26	*4th Sunday in Lent, Mid-*
M.	27	*[lent-Sunday.*
Tu.	28	
W.	29	
Th.	30	
F.	31	

Phases of the MOON.

	D. H. M.
☽ *First Quarter* ---	5. 17. 45
○ Full Moon -----	12. 10. 28
☾ *Last Quarter* ----	19. 21. 59
● New Moon -----	27. 22. 41

Other *Phenomena.*

D. H. M.	
4. 23. 22	☾ ε ♉
5. 13. 54	☾ ι ♉
6. 2. 10	☾ ♄
6. 18. 25	☾ η ♊
6. 21. 35	☾ μ ♊
9. 3. 19	☾ γ ♋
10. 12. 40	☾ η ♌
11. 20. 55	☾ ι ♌
12. 23. 17	☾ c ♍
16. 19. 11	☾ 4 ad ζ ♎
17. - -	♀ λ ♒, ✱ 56′ N.
17. 10. 43	☽ β ♏
17. 11. 47	I. ν ♏ ✱ 5′¾ N. of ☽'s C.
17. 12. 42¼	E. 11′ N.
19. 14. 37	☉ enters ♈
21. - -	♀ φ ♒, ✱ 21′ N.
23. 21. 13	☽ ε ♑

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. South.	Equation of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
W.	1	11. 11. 27. 31	22. 51. 35, 8	7. 16. 28	12. 31, 4	12, 6
Th.	2	11. 12. 27. 37	22. 55. 19, 7	6. 53. 32	12. 18, 8	13, 0
F.	3	11. 13. 27. 41	22. 59. 3, 2	6. 30. 31	12. 5, 8	13, 5
Sa.	4	11. 14. 27. 43	23. 2. 46, 1	6. 7. 24	11. 52, 3	14, 0
Sun.	5	11. 15. 27. 42	23. 6. 28, 6	5. 44. 12	11. 38, 3	14, 5
M.	6	11. 16. 27. 39	23. 10. 10, 6	5. 20. 56	11. 23, 8	14, 9
Tu.	7	11. 17. 27. 34	23. 13. 52, 2	4. 57. 36	11. 8, 9	15, 3
W.	8	11. 18. 27. 26	23. 17. 33, 5	4. 34. 12	10. 53, 6	15, 7
Th.	9	11. 19. 27. 16	23. 21. 14, 3	4. 10. 45	10. 37, 9	16, 0
F.	10	11. 20. 27. 4	23. 24. 54, 8	3. 47. 15	10. 21, 9	16, 4
Sa.	11	11. 21. 26. 50	23. 28. 35, 0	3. 23. 42	10. 5, 5	16, 7
Sun.	12	11. 22. 26. 34	23. 32. 14, 8	3. 0. 7	9. 48, 8	17, 0
M.	13	11. 23. 26. 16	23. 35. 54, 3	2. 36. 30	9. 31, 8	17, 2
Tu.	14	11. 24. 25. 56	23. 39. 33, 6	2. 12. 51	9. 14, 6	17, 4
W.	15	11. 25. 25. 34	23. 43. 12, 7	1. 49. 11	8. 57, 2	17, 6
Th.	16	11. 26. 25. 10	23. 46. 51, 6	1. 25. 30	8. 39, 6	17, 8
F.	17	11. 27. 24. 44	23. 50. 30, 2	1. 1. 48	8. 21, 8	18, 0
Sa.	18	11. 28. 24. 16	23. 54. 8, 7	0. 38. 7	8. 3, 8	18, 2
Sun.	19	11. 29. 23. 46	23. 57. 47, 1	0. 14. 26	7. 45, 6	18, 3
				North.		
M.	20	0. 0. 23. 15	0. 1. 25, 3	0. 9. 16	7. 27, 3	18, 4
Tu.	21	0. 1. 22. 42	0. 5. 3, 4	0. 32. 56	7. 8, 9	18, 4
W.	22	0. 2. 22. 8	0. 8. 41, 5	0. 56. 35	6. 50, 5	18, 4
Th.	23	0. 3. 21. 32	0. 12. 19, 6	1. 20. 13	6. 32, 1	18, 5
F.	24	0. 4. 20. 54	0. 15. 57, 6	1. 43. 48	6. 13, 6	18, 5
Sa.	25	0. 5. 20. 14	0. 19. 35, 6	2. 7. 22	5. 55, 1	18, 5
Sun.	26	0. 6. 19. 32	0. 23. 13, 6	2. 30. 52	5. 36, 6	18, 6
M.	27	0. 7. 18. 48	0. 26. 51, 6	2. 54. 20	5. 18, 0	18, 5
Tu.	28	0. 8. 18. 2	0. 30. 29, 6	3. 17. 44	4. 59, 5	18, 5
W.	29	0. 9. 17. 14	0. 34. 7, 6	3. 41. 4	4. 41, 0	18, 4
Th.	30	0. 10. 16. 24	0. 37. 45, 6	4. 4. 20	4. 22, 6	18, 4
F.	31	0. 11. 15. 32	0. 41. 23, 7	4. 27. 32	4. 4, 2	

Days	Time of ☉'s Semidiam. passg Merid.	THE SUN'S Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node
	M. S.	M. S.	M. S.		S. D. M.
1	1. 5, 2	16. 10, 6	2. 30, 2	9. 996479	2. 28. 4
7	1. 4, 9	16. 9, 1	2. 29, 7	9. 997150	2. 27. 45
13	1. 4, 6	16. 7, 5	2. 29, 2	9. 997853	2. 27. 26
19	1. 4, 4	16. 5, 9	2. 28, 8	9. 998606	2. 27. 7
25	1. 4, 3	16. 4, 2	2. 28, 3	9. 999373	2. 26. 48

The ECLIPSES of JUPITER's SATELLITES

are *not visible* this Month,

JUPITER being *too near* the SUN.

Days	THE PLANETS					
	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D.M.	S. D. M.	D. M.	D. M.	H. M.
	☿ Gr. Elong. 10d. *MERCURY.*					
1	7. 0. 59	1. 49 N	10. 16. 26	1. 1 N	14. 58 S	22. 21
4	7. 10. 10	0. 43 N	10. 18. 0	0. 23 N	15. 5	22. 18
7	7. 18. 57	0. 22 S	10. 20. 13	0. 12 S	14. 57	22. 16
10	7. 27. 27	1. 24	10. 22. 54	0. 42	14. 34	22. 17
13	8. 5. 46	2. 23	10. 26. 1	1. 9	13. 56	22. 20
16	8. 14. 0	3. 18	10. 29. 29	1. 32	13. 6	22. 23
19	8. 22. 15	4. 10	11. 3. 16	1. 51	12. 3	22. 27
22	9. 0. 37	4. 56	11. 7. 18	2. 6	10. 47	22. 32
25	9. 9. 10	5. 37	11. 11. 36	2. 16	9. 19	22. 38
28	9. 18. 1	6. 11	11. 16. 7	2. 23	7. 41	22. 44
31	9. 27. 17	6. 38	11. 20. 51	2. 25	5. 51	22. 52
	♀ *VENUS.*					
1	9. 17. 10	1. 49 S	10. 18. 49	0. 52 S	16. 1 S	22. 36
7	9. 26. 39	2. 16	10. 26. 15	1. 3	13. 46	22. 43
13	10. 6. 8	2. 39	11. 3. 40	1. 13	11. 18	22. 49
19	10. 15. 37	2. 57	11. 11. 6	1. 21	8. 39	22. 55
25	10. 25. 6	3. 11	11. 18. 31	1. 26	5. 52	23. 1
	♂ *MARS.*					
1	2. 0. 49	0. 24 N	1. 0. 50	0. 19 N	12. 4 N	3. 3
7	2. 4. 0	0. 30	1. 5. 2	0. 23	13 35	2. 56
13	2. 7. 9	0. 36	1. 9. 13	0. 27	15. 1	2. 51
19	2. 10. 16	0. 42	1. 13. 22	0. 31	16. 22	2. 45
25	2. 13. 21	0. 47	1. 17. 31	0. 34	17. 37	2. 40
	♃ *JUPITER.*					☌ 15d. 15h.
1	11. 24. 43	1. 17 S	11. 22. 31	1. 4 S	3. 57 S	0. 43
11	11. 25. 38	1. 17	11. 24. 56	1. 4	3. 0	0. 14
21	11. 26. 32	1. 17	11. 27. 21	1. 4	2. 2	23. 44
	♄ *SATURN.*					☐ 10d. 19h.
1	2. 27. 11	1. 3 S	2. 20. 57	1. 4 S	22. 5 N	6. 28
11	2. 27. 34	1. 2	2. 21. 13	1. 2	22. 8	5. 53
21	2. 27. 56	1. 1	2. 21. 40	1. 0	22. 12	5. 18
	♅ *GEORGIAN.*					
1	5. 10. 55	0. 46 N	5. 10. 53	0. 49 N	8. 15 N	11. 57
11	5. 11. 3	0. 46	5. 10. 27	0. 49	8. 25	11. 19
21	5. 11. 10	0. 46	5. 10. 2	0. 49	8. 34	10. 41

Days of the Week.	Days of the Month.	THE MOON's Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
W.	1	0. 12. 45. 28	0. 19. 14. 20	4. 52. 38 S	4. 42. 28 S
Th.	2	0. 25. 46. 2	1. 2. 20. 38	4. 28. 33	4. 10. 57
F.	3	1. 8. 58. 8	1. 15. 38. 36	3. 49. 50	3. 25. 25
Sa.	4	1. 22. 22. 7	1. 29. 8. 50	2. 57. 56	2. 27. 43
Sun.	5	2. 5. 58. 48	2. 12. 52. 11	1. 55. 7	1. 20. 33
M.	6	2. 19. 49. 2	2. 26. 49. 27	0. 44. 29 S	0. 7. 29 S
Tu.	7	3. 3. 53. 24	3. 11. 0. 49	0. 29. 58 N	1. 7. 13 N
W.	8	3. 18. 11. 30	3. 25. 25. 12	1. 43. 39	2. 18. 40
Th.	9	4. 2. 41. 29	4. 9. 59. 48	2. 51. 33	3. 21. 47
F.	10	4. 17. 19. 29	4. 24. 39. 44	3. 48. 44	4. 11. 53
Sa.	11	5. 1. 59. 39	5. 9. 18. 20	4. 30. 50	4. 45. 17
Sun.	12	5. 16. 34. 48	5. 23. 48. 5	4. 55. 0	4. 59. 53
M.	13	6. 0. 57. 21	6. 8. 1. 48	5. 0. 0	4. 55. 29
Tu.	14	6. 15. 0. 48	6. 21. 53. 53	4. 46. 35	4. 33. 35
W.	15	6. 28. 40. 42	7. 5. 21. 7	4. 16. 53	3. 56. 52
Th.	16	7. 11. 55. 9	7. 18. 22. 55	3. 33. 59	3. 8. 39
F.	17	7. 24. 44. 45	8. 1. 1. 1	2. 41. 19	2. 12. 21
Sa.	18	8. 7. 12. 14	8. 13. 18. 55	1. 42. 11	1. 11. 10
Sun.	19	8. 19. 21. 45	8. 25. 21. 21	0. 39. 38 N	0. 7. 57 N
M.	20	9. 1. 18. 27	9. 7. 13. 42	0. 23. 38 S	0. 54. 45 S
Tu.	21	9. 13. 7. 51	9. 19. 1. 32	1. 25. 13	1. 54. 41
W.	22	9. 24. 55. 26	10. 0. 50. 14	2. 22. 56	2. 49. 42
Th.	23	10. 6. 46. 28	10. 12. 44. 43	3. 14. 41	3. 37. 41
F.	24	10. 18. 45. 29	10. 24. 49. 10	3. 58. 21	4. 16. 30
Sa.	25	11. 0. 56. 10	11. 7. 6. 43	4. 31. 51	4. 44. 10
Sun.	26	11. 13. 21. 4	11. 19. 39. 16	4. 53. 12	4. 58. 47
M.	27	11. 26. 1. 27	0. 2. 27. 30	5. 0. 41	4. 58. 49
Tu.	28	0. 8. 57. 23	0. 15. 30. 53	4. 53. 3	4. 43. 23
W.	29	0. 22. 7. 51	0. 28. 48. 0	4. 29. 48	4. 12. 26
Th.	30	1. 5. 31. 6	1. 12. 16. 51	3. 51. 23	3. 26. 57
F.	31	1. 19. 5. 6	1. 25. 55. 35	2. 59. 22	2. 29. 1

Days of the Week.	Days of the Month.	Age.	THE MOON's Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
W.	1	4	2. 6	13.38	19.32	0.33 N	3.11 N
Th.	2	5	2.52	25.31	31.36	5.48	8.22
F.	3	6	3.40	37.49	44.12	10.52	13.16
Sa.	4	7	4.30	50.44	57.29	15.31	17.35
Sun.	5	8	5.24	64.27	71.37	19.26	21. 2
M.	6	9	6.22	78.59	86.33	22.20	23.18
Tu.	7	10	7.22	94.15	102. 5	23.54	24. 7
W.	8	11	8.23	109.58	117.51	23.56	23.21
Th.	9	12	9.23	125.41	133.25	22.22	21. 0
F.	10	13	10.22	141. 0	148.26	19.17	17.16
Sa.	11	14	11.18	155.40	162.43	14.59	12.29
Sun.	12	15	12.11	169.36	176.18	9.50	7. 3
M.	13	16	13. 1	182.52	189.19	4.12 N	1.20 N
Tu.	14	17	13.50	195.40	201.57	1.31 S	4.19 S
W.	15	18	14.38	208.11	214.23	7. 1	9.36
Th.	16	19	15.25	220.36	226.49	12. 2	14.18
F.	17	20	16.13	233. 4	239.21	16.22	18.14
Sa.	18	21	17. 2	245.41	252. 4	19.52	21.15
Sun.	19	22	17.52	258.29	264.57	22.23	23.15
M.	20	23	18.42	271.26	277.56	23.51	24.11
Tu.	21	24	19.31	284.25	290.54	24.14	24. 0
W.	22	25	20.20	297.21	303.44	23.31	22.45
Th.	23	26	21. 8	310. 4	316.19	21.44	20.29
F.	24	27	21.55	322.30	328.37	19. 0	17.17
Sa.	25	28	22.40	334.39	340.38	15.23	13.18
Sun.	26	29	23.25	346.34	352.28	11. 3	8.41
M.	27	1	0	358.21	4.14	6.11	3.35 S
Tu.	28	2	0.11	10. 9	16. 6	0.56 S	1.45 N
W.	29	3	0.56	22. 8	28.16	4.27 N	7. 7
Th.	30	4	1.44	34.31	40.55	9.44	12.15
F.	31	5	2.34	47.28	54.13	14.38	16.51

Days of the Week.	Days of the Month.	THE MOON'S Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
W.	1	15.23	15.27	56.28	56.43	5035	5015
Th.	2	15.31	15.36	56.58	57.14	4996	4976
F.	3	15.40	15.44	57.30	57.46	4956	4936
Sa.	4	15.49	15.53	58. 3	58.19	4915	4895
Sun.	5	15.58	16. 2	58.35	58.51	4875	4855
M.	6	16. 7	16.11	59. 7	59.22	4835	4817
Tu.	7	16.14	16.18	59.36	59.48	4800	4786
W.	8	16.21	16.23	59.59	60. 7	4772	4763
Th.	9	16.25	16.26	60.13	60.17	4755	4751
F.	10	16.26	16.25	60.18	60.16	4750	4752
Sa.	11	16.24	16.21	60.10	60. 1	4759	4770
Sun.	12	16.18	16.14	59.49	59.34	4784	4802
M.	13	16. 9	16. 3	59.16	58.55	4824	4850
Tu.	14	15.57	15.51	58.32	58. 9	4878	4907
W.	15	15.44	15.37	57.45	57.20	4937	4968
Th.	16	15.31	15.24	56.55	56.31	5000	5031
F.	17	15.18	15.12	56. 9	55.48	5059	5086
Sa.	18	15. 7	15. 3	55.29	55.12	5111	5133
Sun.	19	14.59	14.55	54.57	54.45	5153	5169
M.	20	14.52	14.50	54.35	54.27	5182	5193
Tu.	21	14.49	14.48	54.22	54.20	5199	5202
W.	22	14.48	14.49	54.20	54.23	5202	5198
Th.	23	14.51	14.53	54.28	54.36	5191	5181
F.	24	14.55	14.58	54.45	54.56	5169	5154
Sa.	25	15. 1	15. 5	55. 8	55.22	5138	5120
Sun.	26	15. 9	15.14	55.37	55.53	5100	5080
M.	27	15.18	15.23	56.10	56.26	5058	5037
Tu.	28	15.27	15.32	56.43	56.59	5015	4995
W.	29	15.36	15.40	57.15	57.31	4975	4955
Th.	30	15.44	15.48	57.46	58. 0	4936	4918
F.	31	15.52	15.55	58.13	58.25	4902	4887

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	1	53. 57. 19	52. 20. 59	50. 44. 28	49. 7. 48	47. 30. 57	45. 53. 56	44. 16. 45	42. 39. 24
	2	41. 1. 53	39. 24. 11	37. 46. 19	36. 8. 18	34. 30. 7	32. 51. 47	31. 13. 19	29. 34. 44
	3	27. 56. 1	26. 17. 13	24. 38. 20	22. 59. 22	21. 20. 20			
Pollux.	3	- - -	- - -	- - -	- - -	65. 26. 53	63. 46. 41	62. 6. 17	60. 25. 40
	4	58. 44. 50	57. 3. 48	55. 22. 34	53. 41. 8	51. 59. 31	50. 17. 42	48. 35. 41	46. 53. 29
	5	45. 11. 5	43. 28. 30	41. 45. 44	40. 2. 48	38. 19. 40			
Regulus.	5	- - -	- - -	- - -	- - -	74. 9. 31	72. 25. 33	70. 41. 21	68. 56. 55
	6	67. 12. 16	65. 27. 23	63. 42. 17	61. 56. 58	60. 11. 26	58. 25. 41	56. 39. 44	54. 53. 35
	7	53. 7. 14	51. 20. 41	49. 33. 56	47. 47. 1	45. 59. 55	44. 12. 40	42. 25. 15	40. 37. 42
	8	38. 50. 1	37. 2. 11	35. 14. 15	33. 26. 14	31. 38. 9	29. 50. 1	28. 1. 53	26. 13. 46
	9	24. 25. 38							
Spica ♍.	9	78. 26. 50	76. 38. 4	74. 49. 13	73. 0. 18	71. 11. 19	69. 22. 17	67. 33. 15	65. 44. 12
	10	63. 55. 9	62. 6. 7	60. 17. 9	58. 28. 12	56. 39. 19	54. 50. 31	53. 1. 51	51. 13. 19
	11	49. 24. 55	47. 36. 40	45. 48. 37	44. 0. 47	42. 13. 12	40. 25. 51	38. 38. 48	36. 52. 6
	12	35. 5. 46	33. 19. 47	31. 34. 15	29. 49. 15	28. 4. 50	26. 21. 3	24. 38. 0	22. 55. 43
	13	21. 14. 14							
Antares.	13	56. 34. 52	64. 49. 27	63. 4. 21	61. 19. 36	59. 35. 11	57. 51. 8	56. 7. 27	54. 24. 9
	14	52. 41. 14	50. 58. 43	49. 16. 36	47. 34. 54	45. 53. 38	44. 12. 48	42. 32. 25	40. 52. 30

Stars Names	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	15	39. 13. 2	37. 34. 3	35. 55. 33	34. 17. 35	32. 40. 9	31. 3. 16	29. 26. 59	27. 51. 16
	16	26. 16. 11							
α Aquilæ.	16	76. 54. 23	75. 32. 31	74. 11. 12	72. 50. 24	71. 30. 8	70. 10. 28	68. 51. 23	67. 32. 56
	17	66. 15. 6	64. 57. 55	63. 41. 25	62. 25. 36	61. 10. 32	59. 56. 13	58. 42. 41	57. 29. 57
	18	56. 18. 2							
Fomalhaut.	18	84. 49. 33	83. 21. 4	81. 52. 52	80. 24. 56	78. 57. 15	77. 29. 50	76. 2. 40	74. 35. 47
	19	73. 9. 8	71. 42. 45	70. 16. 37	68. 50. 44	67. 25. 6	65. 59. 42	64. 34. 33	63. 9. 37
	20	61. 44. 55							
The Sun.	17	122. 37. 33	121. 10. 44	119. 44. 14	118. 18. 2	116. 52. 9	115. 26. 33	114. 1. 14	112. 36. 11
	18	111. 11. 26	109. 46. 56	108. 22. 40	106. 58. 40	105. 34. 54	104. 11. 21	102. 48. 2	101. 24. 54
	19	100. 1. 59	98. 39. 17	97. 16. 44	95. 54. 22	94. 32. 10	93. 10. 8	91. 48. 13	90. 26. 26
	20	89. 4. 48	87. 43. 17	86. 21. 52	85. 0. 32	83. 39. 19	82. 18. 10	80. 57. 5	79. 36. 2
	21	78. 15. 4	76. 54. 8	75. 33. 14	74. 12. 20	72. 51. 28	71. 30. 36	70. 9. 44	68. 48. 50
	22	67. 27. 56	66. 6. 59	64. 45. 58	63. 24. 55	62. 3. 49	60. 42. 39	59. 21. 25	58. 0. 6
	23	56. 38. 42	55. 17. 12	53 55. 35	52. 33. 52	51. 12. 3	49. 50. 6	48. 28. 2	47. 5. 50
	24	45. 43. 30	44. 21. 2	42. 58. 25	41. 35. 40	40. 12. 46			
Pollux.	29	- - -	- - -	- - -	- - -	82. 11. 43	80. 31. 39	78. 51. 24	77. 10. 58
	30	75. 30. 21	73. 49. 33	72. 8. 34	70. 27. 25	68. 46. 5	67. 4. 35	65. 22. 55	63. 41. 5
	31	61. 59. 6	60. 16. 58	58. 34. 42	56. 52. 18	55. 9. 45	53. 27. 5	51. 44. 18	50. 1. 24
	A. 1	48. 18. 24							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^{h}.	VI^{h}.	IX^{h}.	*Midnight.*	XV^{h}.	XVIII^{h}.	XXI^{h}.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	- - -	- - -	- - -	- - -	37. 31. 58	39. 1. 0	40. 30. 17	41. 59. 48
	2	43. 29. 32	44. 59. 31	46. 29. 43	48. 0. 9	49. 30. 49	51. 1. 42	52. 32. 49	54. 4. 9
	3	55. 35. 43	57. 7. 31	58. 39. 31	60. 11. 46	61. 44. 13	63. 16. 53	64. 49. 47	66. 22. 55
	4	67. 56. 16	69. 29. 52	71. 3. 41	72. 37. 44	74. 12. 1	75. 46. 31	77. 21. 15	78. 56. 13
	5	80. 31. 25	82. 6. 52	83. 42. 32	85. 18. 26	86. 54. 34	88. 30. 56	90. 7. 30	91. 44. 19
	6	93. 21. 22	94. 58. 39	96. 36. 10	98. 13. 54	99. 51. 51	101. 30. 1	103. 8. 24	104. 47. 0
	7	106. 25. 48	108. 4. 49	109. 44. 2	111. 23. 26	113. 3. 2	114. 42. 49	116. 22. 46	118. 2. 53
	8	119. 43. 11							
α Arietis.	5	- - -	- - -	- - -	- -	39. 31. 44	41. 8. 28	42. 45. 50	44. 23. 49
	6	46. 2. 28	47. 41. 41	49. 21. 24	51. 1. 38	52. 42. 23	54. 23. 35	56. 5. 9	57. 47. 6
	7	59. 29. 26							
Aldebaran.	7	27. 33. 36	29. 19. 37	31. 5. 54	32. 52. 28	34. 39. 19	36. 26. 26	38. 13. 45	40. 1. 19
	8	41. 49. 7	43. 37. 7	45. 25. 18	47. 13. 40	49. 2. 13	50. 50. 56	52. 39. 47	54. 28. 46
	9	56. 17. 54	58. 7. 8	59. 56. 29	61. 45. 54	63. 35. 25	65. 25. 0	67. 14. 38	69. 4. 18
	10	70 54. 1							
Pollux.	10	26. 56. 11	28. 44. 29	30. 32. 53	32. 21. 24	34. 10. 4	35. 58. 48	37. 47. 32	39. 36. 18
	11	41. 25. 5	43. 13. 49	45. 2. 28	46. 51. 4	48. 39. 34	50. 27. 58	52. 16. 12	54. 4. 17
	12	55. 52. 13							

Stars Names.	Days	*Noon.*	III^{h}.	VI^{h}.	IX^{h}.	*Midnight.*	XV^{h}.	XVIII^{h}.	XXI^{h}.
		D. M. S.	D. M. S	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	12	20. 2. 35	21. 49. 3	23. 35. 25	25. 21. 44	27. 8. 0	28. 54. 10	30. 40. 12	32. 26. 6
	13	34. 11. 53	35. 57. 20	37. 42. 32	39. 27. 28	41. 12. 9	42. 56. 32	44. 40. 35	46. 24. 20
	14	48. 7. 47	49. 50. 54	51. 33. 40	53. 16. 6	54. 58. 11	56. 39. 54	58. 21. 15	60. 2. 14
	15	61. 42. 51	63. 23. 6	65. 2. 58	66. 42. 28	68. 21. 36	70. 0. 22	71. 38. 46	73. 16. 48
	16	74. 54. 28							
Spica ♍.	16	21. 38. 4	23. 11. 9	24. 44. 16	26. 17. 27	27. 50. 41	29. 23. 56	30. 57. 4	32. 30. 8
	17	34. 3. 8	35. 35. 54	37. 8. 29	38. 40. 54	40. 13. 9	41. 45. 10	43. 16. 59	44. 48. 36
	18	46. 20. 1	47. 51. 12	49. 22. 11	50. 52. 59	52. 23. 34	53. 53. 58	55. 24. 11	56. 54. 14
	19	58. 24. 6	59. 53. 48	61. 23. 20	62. 52. 43	64. 21. 56			
Antares.	19	- - -	- - -	- - -	- - -	18. 59. 30	20. 24. 41	21. 50. 9	23. 15. 56
	20	24. 42. 2	26. 8. 26	27. 34. 58	29. 1. 40	30. 28. 32	31. 55. 29	33. 22. 32	34. 49. 39
	21	36. 16. 52	37. 44. 7	39. 11. 27	40. 38. 50	42. 6. 17	43. 33. 48	45. 1. 24	46. 29. 4
	22	47. 56. 49	49. 24. 40	50. 52. 36	52. 20. 38	53. 48. 45	55. 16. 59	56. 45. 19	58. 13. 46
	23	59. 42. 20	61. 11. 2	62. 39. 53	64. 8. 52	65. 37. 59	67. 7. 16	68. 36. 44	70. 6. 20
	24	71. 36. 7	73. 6. 4	74. 36. 12	76. 6. 31	77. 37. 1	79. 7. 43	80. 38. 37	82. 9. 44
	25	83. 41. 2	85. 12. 33	86. 44. 17	88. 16. 15	89. 48. 24	91. 20. 48	92. 53. 25	94. 26. 17
	26	95. 59. 22							
The Sun.	31	37. 55. 35	39. 29. 51	41. 4. 18	42. 38. 57	44. 13. 48	45. 48. 50	47. 24. 3	48. 59. 26
	A. 1	50. 35. 0							

The SATELLITES of JUPITER

are *not visible* this Month,

JUPITER being *too near* the SUN.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.
Sa.	1	
Sun.	2	*5th Sunday in Lent.*
M.	3	Rich. Bp. of Chichester.
Tu.	4	St. Ambrose.
W.	5	
Th.	6	
F.	7	Camb. Term ends.
Sa.	8	Oxford Term ends.
Sun.	9	*6th Sun. in Lent. Palm Sun.*
M.	10	
Tu.	11	
W.	12	
Th.	13	
F.	14	*Good Friday.*
Sa.	15	
Sun.	16	*Easter-Day.*
M.	17	*Easter Monday.*
Tu.	18	*Easter Tuesday.*
W.	19	Alphege.
Th.	20	
F.	21	
Sa.	22	
Sun.	23	*1st Sunday after Easter.*
M.	24	[*Low-Sun.* St. George.
Tu.	25	*St. Mark. Prs. Mary born.*
W.	26	Oxf. and Camb. Ter. beg.
Th.	27	
F.	28	
Sa.	29	
Sun.	30	*2d Sunday after Easter.*

Phases of the MOON.

	D. H. M.
☽ *First Quarter* ---	4. 1. 1
○ Full Moon ----	10. 21. 43
☾ *Last Quarter* ---	18. 17. 39
● New Moon ----	26. 10. 54

Other *Phenomena.*

D. H. M.	
1. 4. 54	☽ ε ♉
1. 19. 22	☽ ι ♉
2. 10. 44½ Im.	♄, ♄ 4′⅔S. of ☽'s C.
2. 11. 35½ Em.	4′¼S.
3. 11. 9	☽ ε ♊
3. - -	♀ ♃ diff. Lat. 24′
4. 10. 32	☽ κ ♊
5. 10. 2	☽ γ ♋
6. 20. 22	☽ η ♌
8. 5. 31	☽ ι ♌
9. 8. 28	☽ c ♍
11. 14. 58	☽ κ ♍
13. 4. 33	☽ 4 ad ζ ♎
13. 19. 55	☽ β ♏
13. 22. 40	☽ ν ♏
16. 12. 47	☽ λ ♐
19. 3. 16	☉ enters ♉
20. 5. 29	☽ ε ♑
22. 8. 47	☽ 1 ad ↓ ♒
22. 9. 38	☽ 2 ad ↓ ♒
22. 9. 46	☽ 3 ad ↓ ♒
23. 8. 50	☽ 33 ♓
29. 1. 58	☽ ι ♉
29. 20. 1	☽ 132 ♉
29. 20. 34	☽ ♄
30. 16. 57	☽ ε ♊

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. North.	Equation of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sa.	1	0. 12. 14. 38	0. 45. 2, 0	4. 50. 39	3. 45, 8	18, 1
Sun.	2	0. 13. 13. 42	0. 48. 40, 4	5. 13. 41	3. 27, 7	17, 9
M.	3	0. 14. 12. 43	0. 52. 18, 9	5. 36. 37	3. 9, 8	17, 8
Tu.	4	0. 15. 11. 41	0. 55. 57, 5	5. 59. 27	2. 52, 0	17, 7
W.	5	0. 16. 10. 37	0. 59. 36, 3	6. 22. 10	2. 34, 3	17, 6
Th.	6	0. 17. 9. 31	1. 3. 15, 3	6. 44. 47	2. 16, 7	17, 4
F.	7	0. 18. 8. 22	1. 6. 54, 4	7. 7. 17	1. 59, 3	17, 2
Sa.	8	0. 19. 7. 11	1. 10. 33, 7	7. 29. 40	1. 42, 1	16, 9
Sun.	9	0. 20. 5. 58	1. 14. 13, 3	7. 51. 55	1. 25, 2	16, 6
M.	10	0. 21. 4. 43	1. 17. 53, 2	8. 14. 2	1. 8, 6	16, 3
Tu.	11	0. 22. 3. 26	1. 21. 33, 4	8. 36. 0	0. 52, 3	16, 0
W.	12	0. 23. 2. 7	1. 25. 13, 9	8. 57. 50	0. 36, 3	15, 7
Th.	13	0. 24. 0. 46	1. 28. 54, 6	9. 19. 32	0. 20, 6	15, 4
F.	14	0. 24. 59. 23	1. 32. 35, 7	9. 41. 4	0. 5, 2	15, 1
Sa.	15	0. 25. 57. 58	1. 36. 17, 2	10. 2. 26	*Sub.* 9, 9	14, 7
Sun.	16	0. 26. 56. 31	1. 39. 59, 1	10. 23. 39	0. 24, 6	14, 3
M.	17	0. 27. 55. 3	1. 43. 41, 3	10. 44. 42	0. 38, 9	13, 8
Tu.	18	0. 28. 53. 33	1. 47. 23, 8	11. 5. 34	0. 52, 7	13, 4
W.	19	0. 29. 52. 2	1. 51. 6, 9	11. 26. 15	1. 6, 1	13, 0
Th.	20	1. 0. 50. 29	1. 54. 50, 6	11. 46. 45	1. 19, 1	12, 5
F.	21	1. 1. 48. 55	1. 58. 34, 6	12. 7. 4	1. 31, 6	12, 0
Sa.	22	1. 2. 47. 19	2. 2. 19, 1	12. 27. 11	1. 43, 6	11, 6
Sun.	23	1. 3. 45. 42	2. 6. 4, 0	12. 47. 6	1. 55, 2	11, 2
M.	24	1. 4. 44. 3	2. 9. 49, 3	13. 6. 49	2. 6, 4	10, 7
Tu.	25	1. 5. 42. 22	2. 13. 35, 2	13. 26. 19	2. 17, 1	10, 1
W.	26	1. 6. 40. 40	2. 17. 21, 7	13. 45. 35	2. 27, 2	9, 6
Th.	27	1. 7. 38. 56	2. 21. 8, 6	14. 4. 38	2. 36, 8	9, 1
F.	28	1. 8. 37. 10	2. 24. 56, 0	14. 23. 27	2. 45, 9	8, 6
Sa.	29	1. 9. 35. 22	2. 28. 43, 9	14. 42. 1	2. 54, 5	8, 0
Sun.	30	1. 10. 33. 33	2. 32. 32, 4	15. 0. 21	3. 2, 5	

Days	Time of ☉'s Semidiam. passs Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 4, 4	16. 2, 2	2. 27, 6	0. 000245	2. 26. 26
7	1. 4, 5	16. 0, 6	2. 27, 1	0. 000973	2. 26. 7
13	1. 4, 8	15. 59, 0	2. 26, 5	0. 001705	2. 25. 48
19	1. 5, 1	15. 57, 5	2. 26, 1	0. 002436	2. 25. 29
25	1. 5, 5	15. 56, 0	2. 25, 6	0. 003140	2. 25. 10

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Immersions.		*Immersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
15	11. 50. 3	16	20. 40. 10	14	7. 37. 44 Im.
17	6. 19. 3	20	9. 59. 20	14	10. 22. 7 E.
19	0. 48. 4	23	23. 18. 17	21	11. 40. 49 Im.
20	19. 17. 1	27	12. 37. 21	21	14. 23. 59 E.
22	13. 45. 59			28	15. 43. 26 Im.
24	8. 14. 53			28	18. 25. 22 E.
26	2. 43. 45				
27	21. 12. 36				
29	15. 41. 26				

IV. Satellite.	
17	21. 15. 57 Im.
18	0. 15. 24 E.

Days	THE PLANETS Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
	☿		*MERCURY.*		Sup. ♂ 22d. 9h.	
1	10. 0. 29	6. 45 S	11. 22. 29	2. 25 S	5. 12 S	22. 53
4	10. 10. 29	6. 58	11. 27. 31	2. 21	3. 9	23. 1
7	10. 21. 12	6. 58	0. 2. 46	2. 13	0. 56 S	23. 10
10	11. 2. 48	6. 42	0. 8. 15	2. 0	1. 26 N	23. 19
13	11. 15. 27	6. 6	0. 13. 57	1. 43	3. 56	23. 28
16	11. 29. 17	5. 6	0. 19. 53	1. 21	6. 32	23. 39
19	0. 14. 28	3. 40	0. 26. 2	0. 56	9. 12	23. 51
22	1. 1. 0	1. 49 S	1. 2. 21	0. 26 S	11. 53	0. 3
25	1. 18. 45	0. 21 N	1. 8. 47	0. 5 N	14. 31	0. 12
28	2. 7. 22	2. 34	1. 15. 13	0. 37	17. 0	0. 25
30	2. 20. 0	3. 56	1. 19. 28	0. 58	18. 32	0. 34
	♀		*VENUS.*			
1	11. 6. 11	3. 21 S	11. 27. 10	1. 29 S	2. 29 S	23. 8
7	11. 15. 42	3. 23	0. 4. 35	1. 29	0. 28 N	23. 13
13	11. 25. 13	3. 20	0. 11. 59	1. 27	3. 25	23. 18
19	0. 4. 46	3. 11	0. 19. 23	1. 22	6. 20	23. 23
25	0. 14. 19	2. 57	0. 26. 47	1. 15	9. 10	23. 28
	♂		*MARS.*			
1	2. 16. 55	0. 53 N	1. 22. 19	0. 38 N	18. 59 N	2. 34
7	2. 19. 57	0. 59	1. 26. 24	0. 41	20. 2	2. 29
13	2. 22. 56	1. 3	2. 0. 28	0. 44	20. 59	2. 24
19	2. 25. 54	1. 8	2. 4. 31	0. 47	21. 50	2. 18
25	2. 28. 50	1. 12	2. 8. 33	0. 49	22. 34	2. 13
	♃		*JUPITER.*			
1	11. 27. 33	1. 18 S	0. 0. 0	1. 5 S	0. 59 S	23. 14
11	11. 28. 28	1. 18	0. 2. 22	1. 5	0. 3 S	22. 46
21	11. 29. 23	1. 18	0. 4. 41	1. 6	0. 51 N	22. 18
	♄		*SATURN.*			
1	2. 28. 21	1. 0 S	2. 22. 21	0. 58 S	22. 17 N	4. 41
11	2. 28. 43	0. 59	2. 23. 7	0. 56	22. 21	4. 8
21	2. 29. 6	0. 58	2. 24. 2	0. 55	22. 25	3. 35
	♅		*GEORGIAN.*			
1	5. 11. 19	0. 46 N	5. 9. 37	0. 48 N	8. 43 N	9. 59
11	5. 11. 27	0. 46	5. 9. 18	0. 48	8. 50	9. 22
21	5. 11. 35	0. 46	5. 9. 3	0. 48	8. 55	8. 44

Days of the Week.	Days of the Month.	THE MOON's Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sa.	1	2. 2. 48. 1	2. 9. 42. 22	1. 56. 20 S	1. 21. 43 S
Sun.	2	2. 16. 38. 23	2. 23. 36. 4	0. 45. 44 S	0. 8. 53 S
M.	3	3. 0. 35. 20	3. 7. 36. 0	0. 28. 16 N	1. 5. 6 N
Tu.	4	3. 14. 38. 7	3. 21. 41. 36	1. 41. 6	2. 15. 39
W.	5	3. 28. 46. 20	4. 5. 52. 9	2. 48. 12	3. 18. 14
Th.	6	4. 12. 58. 48	4. 20. 5. 59	3. 45. 13	4. 8. 43
F.	7	4. 27. 13. 22	5. 4. 20. 29	4. 28. 22	4. 43. 48
Sa.	8	5. 11. 26. 49	5. 18. 31. 48	4. 54. 51	5. 1. 18
Sun.	9	5. 25. 34. 51	6. 2. 35. 20	5. 3. 8	5. 0. 23
M.	10	6. 9. 32. 42	6. 16. 26. 22	4. 53. 11	4. 41. 45
Tu.	11	6. 23. 15. 53	7. 0. 0. 49	4. 26. 22	4. 7. 24
W.	12	7. 6. 40. 54	7. 13. 15. 53	3. 45. 13	3. 20. 16
Th.	13	7. 19. 45. 46	7. 26. 10. 30	2. 52. 59	2. 23. 46
F.	14	8. 2. 30. 18	8. 8. 45. 21	1. 53. 8	1. 21. 25
Sa.	15	8. 14. 56. 1	8. 21. 2. 42	0. 49. 6 N	0. 16. 30 N
Sun.	16	8. 27. 5. 55	9. 3. 6. 7	0. 16. 0 S	0. 48. 6 S
M.	17	9. 9. 3. 59	9. 15. 0. 5	1. 19. 28	1. 49. 51
Tu.	18	9. 20. 55. 6	9. 26. 49. 42	2. 18. 56	2. 46. 31
W.	19	10. 2. 44. 32	10. 8. 40. 14	3. 12. 19	3. 36. 7
Th.	20	10. 14. 37. 29	10. 20. 36. 52	3. 57. 40	4. 16. 45
F.	21	10. 26. 39. 2	11. 2. 44. 26	4. 33. 7	4. 46. 33
Sa.	22	11. 8. 53. 37	11. 15. 6. 59	4. 56. 48	5. 3. 41
Sun.	23	11. 21. 24. 50	11. 27. 47. 29	5. 6. 59	5. 6. 32
M.	24	0. 4. 15. 3	0. 10. 47. 35	5. 2. 12	4. 53. 51
Tu.	25	0. 17. 25. 4	0. 24. 7. 19	4. 41. 30	4. 25. 7
W.	26	1. 0. 54. 9	1. 7. 45. 10	4. 4. 48	3. 40. 45
Th.	27	1. 14. 40. 1	1. 21. 38. 15	3. 13. 14	2. 42. 35
F.	28	1. 28. 39. 19	2. 5. 42. 44	2. 9. 13	1. 33. 36
Sa.	29	2. 12. 47. 57	2. 19. 54. 32	0. 56. 24 S	0. 18. 7 S
Sun.	30	2. 27. 1. 56	3. 4. 9. 49	0. 20. 34 N	0. 58. 58 N

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	*Midnight.*	*Noon.*	*Midnight.*
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Sa.	1	6	3.28	61. 8	68.16	18.50 N	20.34 N
Sun.	2	7	4.24	75.34	83. 2	22. 2	23.10
M.	3	8	5.23	90.39	98.21	23.56	24.20
Tu.	4	9	6.23	106. 6	113.50	24.20	23.57
W.	5	10	7.23	121.32	129. 8	23.10	22. 2
Th.	6	11	8.21	136.35	143.54	20.33	18.44
F.	7	12	9.16	151. 2	158. 0	16.39	14.20
Sa.	8	13	10. 9	164.48	171.27	11.49	9. 9
Sun.	9	14	10.59	177.58	184.22	6.24	3.34 N
M.	10	15	11.47	190.41	196.57	0.42 N	2. 8 S
Tu.	11	16	12.35	203.10	209.23	4.55 S	7.37
W.	12	17	13.23	215.36	221.50	10.13	12.39
Th.	13	18	14.12	228. 7	234.26	14.55	16.59
F.	14	19	15. 1	240.49	247.15	18.50	20.27
Sa.	15	20	15.50	253.45	260.16	21.48	22.53
Sun.	16	21	16.40	266.50	273.24	23.42	24.14
M.	17	22	17.31	279.58	286.31	24.29	24.26
Tu.	18	23	18.20	293. 1	299.27	24. 7	23.32
W.	19	24	19. 9	305.49	312. 7	22.41	21.35
Th.	20	25	19.56	318.20	324.27	20.15	18.41
F.	21	26	20.42	330.30	336.29	16.55	14.57
Sa.	22	27	21.26	342.24	348.17	12.49	10.32
Sun.	23	28	22.10	354. 9	0. 1	8. 7	5.34
M.	24	29	22.55	5.54	11.50	2.56 S	0.13 S
Tu.	25	30	23.42	17.51	23.58	2.31 N	5.15 N
W.	26	1	0	30.12	36.36	7.58	10.38
Th.	27	2	0.33	43.10	49.57	13.11	15.35
F.	28	3	1.27	56.55	64. 6	17.47	19.45
Sa.	29	4	2.23	71.29	79. 3	21.26	22.47
Sun.	30	5	3.22	86.45	94.34	23.46	24.23

Days of the Week.	Days of the Month.	The Moon's Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
Sa.	1	15. 58	16. 1	58. 37	58. 46	4872	4861
Sun.	2	16. 3	16. 5	58. 55	59. 3	4850	4841
M.	3	16. 7	16. 9	59. 10	59. 16	4832	4824
Tu.	4	16. 10	16. 11	59. 21	59. 25	4819	4813
W.	5	16. 12	16. 13	59. 28	59. 30	4810	4808
Th.	6	16. 13	16. 13	59. 30	59. 29	4808	4809
F.	7	16. 12	16. 10	59. 26	59. 21	4812	4819
Sa.	8	16. 8	16. 6	59. 14	59. 5	4827	4838
Sun.	9	16. 3	16. 0	58. 54	58. 42	4852	4866
M.	10	15. 56	15. 51	58. 27	58. 11	4885	4905
Tu.	11	15. 46	15. 41	57. 53	57. 35	4927	4950
W.	12	15. 36	15. 31	57. 16	56. 56	4973	4999
Th.	13	15. 25	15. 20	56. 36	56. 16	5025	5050
F.	14	15. 15	15. 10	55. 57	55. 39	5075	5098
Sa.	15	15. 5	15. 1	55. 22	55. 7	5120	5140
Sun.	16	14. 58	14. 55	54. 54	54. 43	5157	5171
M.	17	14. 52	14. 51	54. 34	54. 28	5183	5191
Tu.	18	14. 49	14. 49	54. 24	54. 23	5197	5198
W.	19	14. 50	14. 51	54. 25	54. 28	5195	5191
Th.	20	14. 52	14. 55	54. 34	54. 43	5183	5171
F.	21	14. 58	15. 2	54. 55	55. 9	5155	5137
Sa.	22	15. 6	15. 10	55. 24	55. 41	5118	5095
Sun.	23	15. 16	15. 21	56. 0	56. 20	5071	5045
M.	24	15. 27	15. 32	56. 41	57. 2	5018	4991
Tu.	25	15. 38	15. 44	57. 23	57. 44	4965	4938
W.	26	15. 49	15. 54	58. 3	58. 22	4915	4891
Th.	27	15. 59	16. 3	58. 39	58. 54	4870	4852
F.	28	16. 7	16. 10	59. 8	59. 19	4834	4821
Sa.	29	16. 12	16. 14	59. 28	59. 34	4810	4802
Sun.	30	16. 15	16. 16	59. 38	59. 40	4798	4795

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	1	84. 13. 51	82. 30. 22	80. 46. 46	79. 3. 4	77. 19. 15	75. 35. 19	73. 51. 17	72. 7. 8
	2	70. 22. 53	68. 38. 31	66. 54. 2	65. 9. 28	63. 24. 48	61. 40. 2	59. 55. 12	58. 10. 17
	3	56. 25. 17	54. 40. 13	52. 55. 5	51. 9. 55	49. 24. 40	47. 39. 21	45. 54. 0	44. 8. 36
	4	42. 23. 10	40. 37. 42	38. 52. 12	37. 6. 42	35. 21. 12	33. 35. 41	31. 50. 12	30. 4. 47
	5	28. 19. 25	26. 34. 10	24. 49. 2	23. 4. 3	21. 19. 13			
Spica ♍.	5	- - -	- - -	- - -	- - -	75. 18. 5	73. 32. 12	71. 46. 18	70. 0. 25
	6	68. 14. 31	66. 28. 39	64. 42. 48	62. 56. 59	61. 11. 11	59. 25. 25	57. 39. 43	55. 54. 4
	7	54. 8. 30	52. 23. 1	50. 37. 38	48. 52. 22	47. 7. 13	45. 22. 12	43. 37. 21	41. 52. 41
	8	40. 8. 12	38. 23. 54	36. 39. 52	34. 56. 8	33. 12. 41	31. 29. 35	29. 46. 53	28. 4. 36
	9	26. 22. 44							
Antares.	9	71. 54. 26	70. 10. 7	68. 25. 59	66. 42. 3	64. 58. 17	63. 14. 44	61. 31. 25	59. 48. 18
	10	58. 5. 26	56. 22. 49	54. 40. 27	52. 58. 22	51. 16. 32	49. 34. 59	47. 53. 45	46. 12. 49
	11	44. 32. 12	42. 51. 55	41. 11. 59	39. 32. 24	37. 53. 12	36. 14. 21	34. 35. 56	32. 57. 57
	12	31. 20. 26	29. 43. 23	28. 6. 53	26. 30. 55	24. 55. 30			
α Aquilæ.	12	- - -	- - -	- - -	- - -	75. 51. 1	74. 29. 9	73. 7. 46	71. 46. 53
	13	70. 26. 33	69. 6. 45	67. 47. 34	66. 29. 0	65. 11. 3	63. 53. 45	62. 37. 8	61. 21. 16
	14	60. 6. 8	58. 51. 49	57. 38. 19	56. 25. 40	55. 13. 56			

Stars Names.	Days	*Noon.*	III^{h}.	VI^{h}.	IX^{h}.	*Midnight.*	XV^{h}.	XVIII^{h}.	XXI^{h}.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Fomalhaut.	14	- - -	- - -	- - -	- - -	83. 15. 27	81. 45. 56	80. 16. 42	78. 47. 45
	15	77. 19. 4	75. 50. 40	74. 22. 33	72. 54. 42	71. 27. 8	69. 59. 51	68. 32. 50	67. 6. 6
	16	65. 39. 39	64. 13. 30	62. 47. 37	61. 22. 3	59. 56. 45			
α Pegasi.	16	- - -	- - -	- - -	- - -	78. 32. 29	77. 11. 0	75. 49. 45	74. 28. 44
	17	73. 7. 56	71. 47. 23	70. 27. 6	69. 7. 3	67. 47. 15	66. 27. 43	65. 8. 27	63. 49. 28
	18	62. 30. 46	61. 12. 22	59. 54. 16	58. 36. 30	57. 19. 5	56. 2. 2	54. 45. 22	53. 29. 6
	19	52. 13. 14							
The Sun.	16	119. 50. 35	118. 27. 35	117. 4. 44	115. 42. 3	114. 19. 31	112. 57. 8	111. 34. 54	110. 12. 46
	17	108. 50. 45	107. 28. 53	106. 7. 5	104. 45. 25	103. 23. 48	102. 2. 17	100. 40. 49	99. 19. 24
	18	97. 58. 3	96. 36. 44	95. 15. 27	93. 54. 10	92. 32. 54	91. 11. 39	89. 50. 23	88. 29. 5
	19	87. 7. 46	85. 46. 25	84. 25. 0	83. 3. 33	81. 42. 1	80. 20. 25	78. 58. 43	77. 36. 54
	20	76. 15. 1	74. 53. 1	73. 30. 52	72. 8. 35	70. 46. 11	69. 23. 37	68. 0. 53	66. 37. 58
	21	65. 14. 54	63. 51. 39	62. 28. 12	61. 4. 33	59. 40. 42	58. 16. 38	56. 52. 19	55. 27. 48
	22	54. 3. 2	52. 38. 2	51. 12. 47	49. 47. 16	45. 21. 31	46. 55. 30	45. 29. 14	44. 2. 40
	23	42. 35. 51	41. 8. 46	39. 41. 24					
Pollux.	28	52. 25. 4	50. 39. 36	48. 54. 0	47. 8. 18	45. 22. 29	43. 36. 35	41. 50. 36	40. 4. 34
	29	38. 18. 29	36. 32. 22	34. 46. 14	33. 0. 5	31. 13. 57			
Regulus.	29	- - -	- - -	- - -	- - -	67. 6. 21	65. 19. 29	63. 32. 34	61. 45. 37
	30	59. 58. 38	58. 11. 38	56. 24. 39	54. 37. 40	52. 50. 42	51. 3. 46	49. 16. 52	47. 30. 2
	M. 1	45. 43. 15							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	50. 35. 0	52. 10. 45	53. 46. 37	55. 22. 39	56. 58. 50	58. 35. 8	60. 11. 34	61. 48. 8
	2	63. 24. 50	65. 1. 40	66. 38. 37	68. 15. 41	69. 52. 52	71. 30. 10	73. 7. 34	74. 45. 3
	3	76. 22. 39	78. 0. 20	79. 38. 6	81. 15. 57	82. 53. 53	84. 31. 54	86. 10. 0	87. 48. 11
	4	89. 26. 27	91. 4. 47	92. 43. 11	94. 21. 39	96. 0. 10	97. 38. 45	99. 17. 23	100. 56. 4
	5	102. 34. 48	104. 13. 35	105. 52. 23	107. 31. 14	109. 10. 6	110. 48. 59	112. 27. 53	114. 6. 47
	6	115. 45. 42	117. 24. 37	119. 3. 31	120. 42. 25	122. 21. 19			
Aldebaran.	4	38. 19. 4	40. 4. 32	41. 50. 6	43. 35. 45	45. 21. 31	47. 7. 22	48. 53. 17	50. 39. 17
	5	52. 25. 21	54. 11. 29	55. 57. 40	57. 43. 55	59. 30. 12	61. 16. 32	63. 2. 53	64. 49. 16
	6	66. 35. 40	68. 22. 6	70. 8. 31	71. 54. 57	73. 41. 22			
Poliux.	6	- - -	- - -	- - -	- - -	29. 38. 54	31. 24. 21	33. 9. 51	34. 55. 26
	7	36. 41. 5	38. 26. 47	40. 12. 29	41. 58. 12	43. 43. 56	45. 29. 38	47. 15. 18	49. 0. 54
	8	50. 46. 29	52. 32. 0	54. 17. 24	56. 2. 43	57. 47. 57			
Regulus.	8	- - -	- - -	- - -	- - -	21. 58. 1	23. 41. 55	25. 25. 50	27. 9. 46
	9	28. 53. 43	30. 37. 38	32. 21. 29	34. 5. 15	35. 48. 57	37. 32. 30	39. 15. 54	40. 59. 9
	10	42. 42. 15	44. 25. 9	46. 7. 51	47. 50. 21	49. 32. 40	51. 14. 44	52. 56. 36	54. 38. 12
	11	56. 19. 34	58. 0. 41	59. 41. 32	61. 22. 7	63. 2. 27	64. 42. 31	66. 22. 18	68. 1. 48
	12	69. 41. 2	71. 19. 58	72. 58. 36	74. 36. 56	76. 14. 59			

Stars Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
	12	- - -	- - -	- - -	- - -	22. 52. 52	24. 26. 56	26. 1. 2	27. 35. 11
	13	29. 9. 25	30. 43. 38	32. 17. 46	33. 51. 50	35. 25. 49	36. 59. 38	38. 33. 16	40. 6. 44
Spica ♍.	14	41. 40. 3	43. 13. 9	44. 46. 2	46. 18. 44	47. 51. 14	49. 23. 31	50. 55. 36	52. 27. 29
	15	53. 59. 9	55. 30. 36	57. 1. 52	58. 32. 55	60. 3. 47	61. 34. 28	63. 4. 57	64. 35. 17
	16	66. 5. 25							
	16	20. 35. 32	22. 2. 26	23. 29. 29	24. 56. 42	26. 24. 8	27. 51. 42	29. 19. 19	30. 47. 2
	17	32. 14. 50	33. 42. 37	35. 10. 25	36. 38. 14	38. 6. 4	39. 33. 53	41. 1. 43	42. 29. 33
	18	43. 57. 24	45. 25. 16	46. 53. 9	48. 21. 4	49. 49. 0	51. 16. 58	52. 44. 59	54. 13. 3
Antares.	19	55. 41. 10	57. 9. 20	58. 37. 35	60. 5. 54	61. 34. 18	63. 2. 48	64. 31. 25	66. 0. 8
	20	67. 28. 59	68. 57. 56	70. 27. 2	71. 56. 18	73. 25. 42	74. 55. 16	76. 25. 1	77. 54. 56
	21	79. 25. 2	80. 55. 20	82. 25. 49	83. 56. 31	85. 27. 25	86. 58. 34	88. 29. 57	90. 1. 33
	22	91. 33. 23	93. 5. 29	94. 37. 50	96. 10. 27	97. 43. 19	99. 16. 28	100. 49. 52	102. 23. 34
	23	103. 57. 32	105. 31. 48	107. 6. 21	108. 41. 12	110. 16. 21			
	23	- - -	- - -	- - -	- - -	66. 5. 49	67. 24. 7	68. 43. 2	70. 2. 31
α Aquilæ.	24	71. 22. 37	72. 43. 15	74. 4. 26	75. 26. 5	76. 48. 16	78. 10. 55	79. 33. 59	80. 57. 28
	25	82. 21. 23							
	29	- - -	- - -	- - -	- - -	39. 50. 8	41. 29. 36	43. 9. 8	44. 48. 45
The Sun.	30	46. 28. 26	48. 8. 11	49. 47. 57	51. 27. 45	53. 7. 35	54. 47. 26	56. 27. 14	58. 7. 2
	M. 1	59. 46. 50							

CONFIGURATIONS of the SATELLITES of JUPITER

at V o'Clock *in the Morning.*

16	3. 1. ○ ·2 4.
17	·3 ○ 2. ·1 4.
18	2. 1. ·3 ○ 4.
19	2.○ 4. ○ 1. ·3
20	4. ·1 ○ 2. ·3
21	4. 2. ○ 1. 3.
22	4. ·2 3. ○ 1.○
23	·4 3. 1. ○ ·2
24	·4 ·3 ○ ·1 2.
25	·4 2. ·3 1. ○
26	·4 ·2 ○ 1 ó 3
27	4.○ ·1 ○ ·2 ·3
28	2. ○ 1. ·4 3.
29	3● ·2 ·1 ○ ·4
30	1● 3. ○ ·2 ·4

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.
M.	1	*St. Philip & St. Ja.* From
Tu.	2	[Easter in 15 days 1 r.
W.	3	Easter Term begins. Inv.
Th.	4	[of the cross.
F.	5	
Sa.	6	John Evan. ante Port. Lat.
Sun.	7	*3d Sunday after Easter.*
M.	8	From Easter in 3 weeks
Tu.	9	[2 ret.
W.	10	
Th	11	
F.	12	
Sa.	13	
Sun.	14	*4th Sunday after Easter.*
M.	15	From Easter in 4 weeks,
Tu.	16	[3 ret.
W.	17	
Th.	18	[Dunst.
F.	19	*Qu. Charlotte born*, 1744.
Sa.	20	[*Sun.*
Sun.	21	*5th Sun. after Easter Rog.*
M.	22	From Easter in 5 weeks
Th.	23	[4 ret. *Prs. Eliz. born.*
W.	24	
Th.	25	*Ascens. Day, Holy-Thurs.*
F.	26	Aug. 1st. Abp. Cant. On
Sa.	27	Vene. Bede. [m. of As. 5 r.
Sun.	28	*Sun. after Ascension-Day.*
M.	29	*K. Char. II. restored.* East.
Tu.	30	[Term ends.
W.	31	Camb. Term divides n.

Phases of the MOON.

	D. H. M.
☽ *First Quarter* - - - -	3. 6. 48
○ Full Moon - - - - -	10. 9. 56
☾ *Last Quarter* - - - -	18. 11. 42
● New Moon - - - - -	25. 20. 34

Other *Phenomena.*

D. H. M.	
1. 16. 4	☽ x ♊
2. 15. 29	☽ γ ♋
4. 2. 5	☽ n ♌
5. 11. 50	☽ ι ♌
6. 15. 23	☽ c ♍
8. 22. 56	☽ x ♍
10. 12. 53	☽ 4 ad ζ ♎
11. 4. 19	☽ β ♏
11. 7. 5	☽ ι ♏
12. 17. 17	☽ β Ophiuchi
13. 20. 57	☽ λ ♐
16. - -	♅ Stationary
17. 13. 33	☽ ι ♑
19 - -	♂ 132 ♉, ✱ 10′ N.
19. 18. 16	☽ 2 ad ↓ ♒
19. 18. 24	☽ 3 ad ↓ ♒
20. 3. 46	☉ enters ♊
20. 17. 47	☽ 33 ♓
22. - -	☿ 132 ♉, ✱ 50′ S.
27. 9. 56	☽ ♄
27. 10. 32	☽ ☿
27. 13. 6	☽ ♂
28. 0. 33	☽ ι ♊
28. 23. 0	☽ x ♊
29. 21. 49	☽ γ ♋
31. 7. 44	☽ n ♌

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. North.	Equation of Time Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
M.	1	1. 11. 31. 42	2. 36. 21, 6	15. 18. 28	3. 10, 0	7, 1
Tu.	2	1. 12. 29. 48	2. 40. 10 9	15. 36. 18	3. 17, 1	6, 5
W.	3	1. 13. 27. 52	2. 44. 1, 0	15. 53. 53	3. 23, 6	6, 0
Th.	4	1. 14. 25. 54	2. 47. 51, 5	16. 11. 11	3. 29, 6	5, 4
F.	5	1. 15. 23. 55	2. 51. 42, 6	16. 28. 14	3. 35, 0	4, 9
Sa.	6	1. 16. 21. 53	2. 55. 34, 3	16. 45. 0	3. 39, 9	4, 4
Sun.	7	1. 17. 19. 50	2. 59. 26, 5	17. 1. 30	3. 44, 3	3, 8
M.	8	1. 18. 17. 45	3. 3. 19, 3	17. 17. 43	3. 48, 1	3, 2
Tu.	9	1. 19. 15. 38	3. 7. 12, 6	17. 33. 37	3. 51, 3	2, 6
W.	10	1. 20. 13. 29	3. 11. 6, 5	17. 49. 15	3. 53, 9	2, 1
Th.	11	1. 21. 11. 19	3. 15. 0, 9	18. 4. 35	3. 56, 0	1, 5
F.	12	1. 22. 9. 7	3. 18. 56, 0	18. 19. 36	3. 57, 5	1, 0
Sa.	13	1. 23. 6. 54	3. 22. 51, 6	18. 34. 20	3. 58, 5	0, 3
Sun.	14	1. 24. 4. 40	3. 26. 47, 8	18. 48. 44	3. 58, 8	0, 2
M.	15	1. 25. 2. 25	3. 30. 44, 6	19. 2. 50	3. 58, 6	0, 8
Tu.	16	1. 26. 0. 9	3. 34. 42, 0	19. 16. 37	3. 57, 8	1, 4
W.	17	1. 26. 57. 51	3. 38. 39, 9	19. 30. 4	3. 56, 4	2, 0
Th.	18	1. 27. 55. 33	3. 42. 38, 5	19. 43. 11	3. 54, 4	2, 6
F.	19	1. 28. 53. 13	3. 46. 37, 7	19. 55. 59	3. 51, 8	3, 2
Sa.	20	1. 29. 50. 53	3. 50. 37, 4	20. 8. 25	3. 48, 6	3, 7
Sun.	21	2. 0. 48. 32	3. 54. 37, 7	20. 20. 32	3. 44, 9	4, 3
M.	22	2. 1. 46. 10	3. 58. 38, 5	20. 32. 18	3. 40, 6	4, 8
Tu.	23	2. 2. 43. 47	4. 2. 39, 9	20. 43. 43	3. 35, 8	5, 3
W.	24	2. 3. 41. 23	4. 6. 41, 8	20. 54. 47	3. 30, 5	5, 9
Th.	25	2. 4. 38. 58	4. 10. 44, 2	21. 5. 29	3. 24, 6	6, 4
F.	26	2. 5. 36. 32	4. 14. 47, 2	21. 15. 49	3. 18, 2	6, 8
Sa.	27	2. 6. 34. 5	4. 18. 50, 6	21. 25. 48	3. 11, 4	7, 3
Sun.	28	2. 7. 31. 36	4. 22. 54, 4	21. 35. 24	3. 4, 1	7, 7
M.	29	2. 8. 29. 7	4. 26. 58, 7	21. 44. 37	2. 56, 4	8, 1
Tu.	30	2. 9. 26. 36	4. 31. 3, 5	21. 53. 28	2. 48, 3	8, 6
W.	31	2. 10. 24. 4	4. 35. 8, 6	22. 1. 56	2. 39, 7	

Days	Time of ☉'s Semidiam. passs Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node
	M. S.	M. S.	M. S.		S. D. M.
1	1. 5,9	15. 54, 5	2. 25, 3	0. 003784	2. 24. 51
7	1. 6,4	15. 53, 1	2. 24, 9	0. 004374	2. 24. 32
13	1. 6,9	15. 52, 0	2. 24, 6	0. 004938	2. 24. 13
19	1. 7,4	15. 50, 8	2. 24, 2	0. 005468	2. 23. 53
25	1. 7,9	15. 49, 8	2. 23, 9	0. 005936	2. 23. 34

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Immersions.		*Immersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	10. 10. 12	1	1. 56. 22	5	19. 45. 9 Im.
3	4. 38. 58	4	15. 15. 15	5	22. 26. 4 E.
4	23. 7. 38	8	4. 34. 3	12	23. 46. 38 Im.
6	17. 36. 21	11	17. 52. 44	13	2. 26. 20 E.
8	12. 4. 58	15	7. 11. 17	20	3. 47. 39 Im.
10	6. 33. 31	18	20. 29. 43	20	6. 26. 8 E.
12	1. 2. 8	22	9. 48. 5	27	7. 48. 2 Im.
13	19. 30. 39	25	23. 6. 24	27	10. 25. 17 E.
15	13. 59. 9	29	12. 24. 36		
17	8. 27. 35				
19	2. 56. 2				
20	21. 24. 23				
22	15. 52. 47			IV. Satellite.	
24	10. 21. 5				
26	4. 49. 24			4	15. 37. 10 Im.
27	23. 17. 38			4	18. 28. 3 E.
29	17. 45. 55			21	9. 56. 57 Im.
31	12. 14. 5			21	12. 38. 5 E.

Days	THE PLANETS					
	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
	☿ Gr. Elong. 22d. *MERCURY.*					
1	2. 26. 18	4. 33 N	1. 21. 33	1. 7 N	19. 16 N	0. 39
4	3. 14. 54	6. 0	1. 27. 36	1. 35	21. 11	0. 52
7	4. 2. 33	6. 49	2. 3. 19	1. 57	22. 45	1. 4
10	4. 18. 55	6. 59	2. 8. 35	2. 13	23. 57	1. 15
13	5. 3. 50	6. 40	2. 13. 21	2. 21	24. 46	1. 24
16	5. 17. 22	5. 59	2. 17. 35	2. 22	25. 15	1. 30
19	5. 29. 41	5. 4	2. 21. 17	2. 15	25. 26	1. 35
22	6. 10. 56	4. 2	2. 24. 25	2. 0	25. 20	1. 36
25	6. 21. 20	2. 56	2. 26. 55	1. 37	25. 3	1. 36
28	7. 1. 3	1. 48	2. 28. 49	1. 6	24. 34	1. 32
31	7. 10. 14	0. 42	3. 0. 3	0. 28	23. 56	1. 25
	♀ *VENUS.*				Sup. ♂ 28d. 13h¼.	
1	0. 23. 53	2. 38 S	1. 4. 10	1. 7 S	11. 53 N	23. 33
7	1. 3. 28	2. 14	1. 11. 33	0. 57	14. 25	23. 39
13	1. 13. 5	1. 47	1. 18. 56	0. 45	16. 45	23. 45
19	1. 22. 42	1. 17	1. 26. 19	0. 32	18. 50	23. 51
25	2. 2. 20	0. 44	2. 3. 41	0. 18	20. 37	23. 57
	♂ *MARS.*					
1	3. 1. 45	1. 17 N	2. 12. 34	0. 51 N	23. 11 N	2. 7
7	3. 4. 38	1. 21	2. 16. 34	0. 54	23 41	2. 2
13	3. 7. 30	1. 24	2. 20. 32	0. 55	24. 3	1. 55
19	3. 10. 21	1. 28	2. 24. 30	0. 57	24. 19	1. 49
25	3. 13. 10	1. 31	2. 28. 26	0. 59	24. 27	1. 42
	♃ *JUPITER.*					
1	0. 0. 16	1. 18 S	0. 6. 56	1. 7 S	1. 43 N	21. 48
11	0. 1. 11	1. 18	0. 9. 4	1. 9	2. 32	21. 18
21	0. 2. 6	1. 19	0. 11. 5	1. 10	3. 19	20. 46
	♄ *SATURN.*					
1	2. 29. 29	0. 57 S	2. 25. 3	0. 53 S	22. 29 N	3. 2
11	2. 29. 51	0. 56	2. 26. 10	0. 52	22. 33	2. 28
21	3. 0. 14	0. 56	2. 27. 21	0. 51	22. 36	1. 54
	♅ *GEORGIAN.*				□ 29d. 10h.	
1	5. 11. 42	0. 46 N	5. 8. 53	0. 47 N	8. 59 N	8. 6
11	5. 11. 50	0. 46	5. 8. 48	0. 47	9. 0	7. 27
21	5. 11. 58	0. 46	5. 8. 48	0. 47	9. 0	6. 47

Days of the Week.	Days of the Month.	THE MOON's Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
M.	1	3. 11. 17. 44	3. 18. 25. 22	1. 36. 28 N	2. 12. 28 N
Tu.	2	3. 25. 32. 27	4. 2. 38. 45	2. 46. 22	3. 17. 37
W.	3	4. 9. 44. 2	4. 16. 48. 7	3. 45. 46	4. 10. 23
Th.	4	4. 23. 50. 49	5. 0. 51. 54	4. 31. 7	4. 47. 41
F.	5	5. 7. 51. 15	5. 14. 48. 33	4. 59. 54	5. 7. 39
Sa.	6	5. 21. 43. 41	5. 28. 36. 20	5. 10. 51	5. 9. 34
Sun.	7	6. 5. 26. 20	6. 12. 13. 25	5. 3. 52	4. 53. 56
M.	8	6. 18. 57. 22	6. 25. 37. 56	4. 39. 59	4. 22. 19
Tu.	9	7. 2. 15. 0	7. 8. 48. 20	4. 1. 15	3. 37. 10
W.	10	7. 15. 17. 53	7. 21. 43. 32	3. 10. 28	2. 41. 35
Th.	11	7. 28. 5. 21	8. 4. 23. 17	2. 10. 54	1. 38. 54
F.	12	8. 10. 37. 31	8. 16. 48. 10	1. 5. 59 N	0. 32. 34 N
Sa.	13	8. 22. 55. 30	8. 28. 59. 46	0. 0. 58 S	0. 34. 14 S
Sun.	14	9. 5. 1. 21	9. 11. 0. 37	1. 6. 54	1. 38. 39
M.	15	9. 16. 58. 2	9. 22. 54. 4	2. 9. 10	2. 38. 11
Tu.	16	9. 28. 49. 17	10. 4. 44. 11	3. 5. 27	3. 30. 42
W.	17	10. 10. 39. 25	10. 16. 35. 29	3. 53. 43	4. 14. 17
Th.	18	10. 22. 33. 5	10. 28. 32. 44	4. 32. 13	4. 47. 16
F.	19	11. 4. 35. 5	11. 10. 40. 43	4. 59. 17	5. 8. 2
Sa.	20	11. 16. 50. 10	11. 23. 3. 57	5. 13. 20	5. 15. 4
Sun.	21	11. 29. 22. 35	0. 5. 46. 24	5. 13. 0	5. 7. 5
M.	22	0. 12. 15. 42	0. 18. 50. 45	4. 57. 10	4. 43. 12
Tu.	23	0. 25. 31. 43	1. 2. 18. 34	4. 25. 12	4. 3. 13
W.	24	1. 9. 11. 9	1. 16. 9. 18	3. 37. 26	3. 8. 5
Th.	25	1. 23. 12. 35	2. 0. 20. 30	2. 35. 28	2. 0. 5
F.	26	2. 7. 32. 26	2. 14. 47. 43	1. 22. 25	0. 43. 7 S
Sa.	27	2. 22. 5. 34	2. 29. 25. 13	0. 2. 51 S	0. 37. 39 N
Sun.	28	3. 6. 45. 46	3. 14. 6. 31	1. 17. 36 N	1. 56. 19
M.	29	3. 21. 26. 37	3. 28. 45. 24	2. 33. 2	3. 7. 8
Tu.	30	4. 6. 2. 16	4. 13. 16. 36	3. 38. 3	4. 5. 16
W.	31	4. 20. 28. 0	4. 27. 36. 5	4. 28. 26	4. 47. 14

Days of the Week.	Days of the Month.	Age.	THE MOON'S Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
M.	1	6	4. 24	102. 26	110. 17	24. 35 N	24. 23 N
Tu.	2	7	5. 25	118. 4	125. 45	23. 47	22. 48
W.	3	8	6. 24	133. 16	140. 36	21. 28	19. 48
Th.	4	9	7. 19	147. 44	154. 41	17. 51	15. 40
F.	5	10	8. 11	161. 27	168. 2	13. 16	10. 43
Sa.	6	11	9. 0	174. 28	180. 47	8. 2	5. 17 N
Sun.	7	12	9. 47	187. 0	193. 9	2. 29 N	0. 20 S
M.	8	13	10. 33	199. 16	205. 21	3. 7 S	5. 51
Tu.	9	14	11. 21	211. 28	217. 36	8. 29	11. 1
W.	10	15	12. 7	223. 47	230. 2	13. 24	15. 37
Th.	11	16	12. 56	236. 21	242. 44	17. 38	19. 26
F.	12	17	13. 46	249. 12	255. 43	20. 59	22. 17
Sa.	13	18	14. 37	262. 17	268. 54	23. 18	24. 2
Sun.	14	19	15. 27	275. 31	282. 8	24. 29	24. 39
M.	15	20	16. 17	288. 42	295. 13	24. 31	24. 7
Tu.	16	21	17. 5	301. 39	308. 0	23. 27	22. 31
W.	17	22	17. 52	314. 15	320. 25	21. 20	19. 55
Th.	18	23	18. 37	326. 28	332. 26	18. 18	16. 29
F.	19	24	19. 21	338. 20	344. 10	14. 29	12. 19
Sa.	20	25	20. 5	349. 57	355. 44	10. 1	7. 35
Sun.	21	26	20. 48	1. 31	7. 20	5. 2 S	2. 24 S
M.	22	27	21. 34	13. 12	19. 11	0. 17 N	3. 1 N
Tu.	23	28	22. 22	25. 17	31. 32	5. 46	8. 29
W.	24	29	23. 14	37. 58	44. 37	11. 8	13. 41
Th.	25	1	☌	51. 29	58. 37	16. 5	18. 17
F.	26	2	0. 10	65. 59	73. 35	20. 14	21. 53
Sa.	27	3	1. 10	81. 24	89. 22	23. 11	24. 6
Sun.	28	4	2. 12	97. 26	105. 33	24. 35	24. 39
M.	29	5	3. 15	113. 37	121. 35	24. 16	23. 29
Tu.	30	6	4. 16	129. 23	137. 0	22. 18	20. 46
W.	31	7	5. 14	144. 22	151. 31	18. 55	16. 48

Days of the Week.	Days of the Month.	The Moon's Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
M.	1	16. 16	16. 15	59. 40	59. 38	4795	4798
Tu.	2	16. 14	16. 13	59. 35	59. 30	4801	4808
W.	3	16. 11	16. 9	59. 24	59. 17	4815	4823
Th.	4	16. 7	16. 5	59. 9	59. 0	4833	4844
F.	5	16. 2	15. 59	58. 50	58. 39	4856	4870
Sa.	6	15. 56	15. 53	58. 28	58. 16	4883	4898
Sun.	7	15. 49	15. 45	58. 3	57. 49	4915	4932
M.	8	15. 41	15. 37	57. 35	57. 20	4950	4968
Tu.	9	15. 33	15. 29	57. 4	56. 48	4989	5009
W.	10	15. 24	15. 20	56. 32	56. 16	5029	5050
Th.	11	15. 16	15. 12	56. 1	55. 46	5069	5089
F.	12	15. 8	15. 4	55. 31	55. 17	5108	5127
Sa.	13	15. 0	14. 57	55. 4	54. 52	5144	5159
Sun.	14	14. 54	14. 52	54. 42	54. 34	5173	5183
M.	15	14. 50	14. 49	54. 27	54. 22	5193	5199
Tu.	16	14. 48	14. 48	54. 20	54. 20	5202	5202
W.	17	14. 49	14. 50	54. 22	54. 27	5199	5193
Th.	18	14. 52	14. 55	54. 35	54. 45	5182	5169
F.	19	14. 58	15. 2	54. 57	55. 11	5153	5134
Sa.	20	15. 7	15. 12	55. 28	55. 48	5112	5086
Sun.	21	15. 18	15. 24	56. 9	56. 32	5059	5029
M.	22	15. 31	15. 38	56. 56	57. 21	4999	4967
Tu.	23	15. 45	15. 52	57. 46	58. 11	4936	4905
W.	24	15. 58	16. 4	58. 36	58. 59	4874	4845
Th.	25	16. 10	16. 16	59. 20	59. 40	4820	4795
F.	26	16. 20	16. 24	59. 57	60. 10	4775	4759
Sa.	27	16. 26	16. 28	60. 20	60. 26	4747	4740
Sun.	28	16. 29	16. 28	60. 28	60. 27	4737	4739
M.	29	16. 27	16. 26	60. 23	60. 17	4743	4751
Tu.	30	16. 23	16. 20	60. 8	59. 56	4761	4776
W.	31	16. 16	16. 12	59. 42	59. 27	4793	4811

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	1	45. 43. 12	43. 56. 30	42. 9. 51	40. 23. 18	38. 36. 51	36. 50. 30	35. 4. 18	33. 18. 15
	2	31. 32. 21	29. 46. 34	28. 1. 2	26. 15. 46	24. 30. 46	22. 46. 6	21. 1. 48	19. 17. 57
	3	17. 34. 31							
Spica ♍.	3	71. 28. 29	69. 43. 10	67. 57. 59	66. 12. 55	64. 27. 59	62. 43. 12	60. 58. 33	59. 14. 3
	4	57. 29. 42	55. 45. 31	54. 1. 30	52. 17. 39	50. 33. 59	48. 50. 29	47. 7. 11	45. 24. 6
	5	43. 41. 14	41. 58. 34	40. 16. 11	38. 34. 3	36. 52. 12	35. 10. 34	33. 29. 18	31. 48. 26
	6	30. 7. 56	28. 27. 53	26. 48. 20	25. 9. 18	23. 30. 49			
Antares.	6	- - -	- - -	- - -	- - -	68. 55. 43	67. 14. 0	65. 32. 28	63. 51. 8
	7	62. 9. 58	60. 29. 0	58. 48. 15	57. 7. 41	55. 27. 20	53. 47. 11	52. 7. 15	50. 27. 33
	8	48. 48. 4	47. 8. 49	45. 29. 50	43. 51. 6	42. 12. 37	40. 34. 24	38. 56. 28	37. 18. 51
	9	35. 41. 32	34. 4. 31	32. 27. 53	30. 51. 39	29. 15. 48	27. 40. 25	26. 5. 29	24. 31. 3
	10	22. 57. 8							
α Aquilæ.	10	74. 9. 57	72. 49. 30	71. 29. 29	70. 9. 56	68. 50. 52	67. 32. 18	66. 14. 20	64. 56. 57
	11	63. 40. 10	62. 24. 0	61. 8. 34	59. 53. 51	58. 39. 51	57. 26. 40	56. 14. 19	55. 2. 49
	12	53. 52. 12							
Fomalhaut.	12	81. 25. 35	79. 56. 5	78. 26. 48	76. 57. 47	75. 28. 59	74. 0. 27	72. 32. 10	71. 4. 8
	13	69. 36. 22	68. 8. 52	66. 41. 38	65. 14. 40	63. 47. 59	62. 21. 35	60. 55. 27	59. 29. 37
	14	58. 4. 5							

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Pegasi.	14	76. 50. 52	75. 29. 16	74. 7. 56	72. 46. 51	71. 26. 0	70. 5. 25	68. 45. 8	67. 25. 7
	15	66. 5. 24	64. 45. 59	63. 26. 53	62. 8. 7	60. 49. 42	59. 31. 38	58. 13. 57	56. 56. 39
	16	55. 39. 45							
α Arietis.	16	96. 25. 59	94. 59. 46	93. 33. 33	92. 7. 20	90. 41. 8	89. 14. 56	87. 48. 43	86. 22. 29
	17	84. 56. 15	83. 30. 0	82. 3. 42	80. 37. 23	79. 11. 1	77. 44. 37	76. 18. 9	74. 51. 38
	18	73. 25. 3	71. 58. 24	70. 31. 41	69. 4. 54	67. 38. 1			
The Sun.	15	- - -	- - -	- - -	- - -	122. 34. 53	121. 13. 9	119. 51. 29	118. 29. 52
	16	117. 8. 18	115. 46. 46	114. 25. 15	113. 3. 45	111. 42. 15	110. 20. 45	108. 59. 13	107. 37. 41
	17	106. 16. 7	104. 54. 32	103. 32. 53	102. 11. 11	100. 49. 25	99. 27. 34	98. 5. 37	96. 43. 35
	18	95. 21. 27	93. 59. 12	92. 36. 50	91. 14. 19	89. 51. 41	88. 28. 53	87. 5. 54	85. 42. 45
	19	84. 19. 26	82. 55. 55	81. 32. 11	80. 8. 15	78. 44. 6	77. 19. 43	75. 55. 5	74. 30. 13
	20	73. 5. 5	71. 39. 41	70. 14. 0	68. 48. 3	67. 21. 48	65. 55. 15	64. 28. 23	63. 1. 12
	21	61. 33. 42	60. 5. 52	58. 37. 42	57. 9. 12	55. 40. 21	54. 11. 9	52. 41. 36	51. 11. 41
	22	49. 41. 25	48. 10. 46	46. 39. 44	45. 8. 19	43. 36. 32	42. 4. 22	40. 31. 48	38. 58. 51
	23	37. 25. 31							
Regulus.	27	- - -	- - -	- - -	- - -	57. 35. 7	55. 45. 2	53. 54. 58	52. 4. 51
	28	50. 14 45	48. 24. 40	46. 34. 39	44. 44. 43	42. 54. 50	41. 5. 5	39. 15. 28	37. 26. 0
	29	35. 36. 42	33. 47. 32	31. 58. 38	30. 9. 59	28. 21. 36	26. 33. 33	24. 45. 51	22. 58. 31
	30	21. 11. 37							
Spica ♍.	30	75. 8. 58	73. 20. 55	71. 33. 5	69. 45. 28	67. 58. 4	66. 10. 54	64. 23. 58	62. 37. 17
	31	60. 50. 51	59. 4. 41	57. 18. 48	55. 33. 12	53. 47. 52	52. 2. 50	50. 18. 6	48. 33. 41
	J. 1	46. 49. 38							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	59. 46. 49	61. 26. 36	63. 6. 21	64. 46. 3	66. 25. 44	68. 5. 21	69. 44. 55	71. 24. 26
	2	73. 3. 53	74. 43. 16	76. 22. 34	78. 1. 48	79. 40. 57	81. 20. 1	82. 58. 59	84. 37. 52
	3	86. 16. 39	87. 55. 20	89. 33. 55	91. 12. 24	92. 50. 47	94. 29. 3	96. 7. 11	97. 45. 13
	4	99. 23. 8	101. 0. 55	102. 38. 35	104. 16. 7	105. 53. 32	107. 30. 50	109. 8. 0	110. 45. 2
	5	112. 21. 56	113. 58. 41	115. 35. 17	117. 11. 44	118. 48. 3	120. 24. 13		
Pollux.	3	19. 27. 3	21. 10. 45	22. 54. 37	24. 38. 38	26. 22. 46	28. 7. 0	29. 51. 16	31. 35. 35
	4	33. 19. 54	35. 4. 9	36. 48. 21	38. 32. 30	40. 16. 36	42. 0. 37	43. 44. 33	45. 28. 24
	5	47. 12. 9	48. 55. 46	50. 39. 17	52. 22. 40	54. 5. 57	55. 49. 6	57. 32. 7	59. 15. 0
	6	60. 57. 45							
Regulus.	6	25. 7. 43	26. 49. 18	28. 30. 50	30. 12. 19	31. 53. 48	33. 35. 12	35. 16. 31	36. 57. 45
	7	38. 38. 53	40. 19. 53	42. 0. 45	43. 41. 30	45. 22. 6	47. 2. 33	48. 42. 50	50. 22. 58
	8	52. 2. 57	53. 42. 45	55. 22. 22	57. 1. 49	58. 41. 5	60. 20. 10	61. 59. 3	63. 37. 46
	9	65. 16. 16	66. 54. 34	68. 32. 39	70. 10. 32	71. 48. 13	73. 25. 42	75. 2. 58	76. 40. 2
	10	78. 16. 53							
Spica ♍.	10	24. 49. 42	26. 23. 8	27. 56. 40	29. 30. 16	31. 3. 55	32. 37. 36	34. 11. 14	35. 44. 50
	11	37. 18. 24	38. 51. 49	40. 25. 7	41. 58. 19	43. 31. 23	45. 4. 18	46. 37. 5	48. 9. 42
	12	49. 42. 11	51. 14. 28	52. 46. 36	54. 18. 33	55. 50. 21	57. 21. 58	58. 53. 24	60. 24. 41
	13	61. 55. 48	63. 26. 46	64. 57. 33	66. 28. 10	67. 58. 36			

Stars Names.	Days	Noon.	IIIh.	VIh.	IXh.	Midnight.	XVh.	XVIIIh.	XXIh.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
	13	- - -	- - -	- - -	- - -	22. 23. 27	23. 51. 18	25. 19. 16	26. 47. 20
	14	28. 15. 30	29. 43. 45	31. 12. 1	32. 40. 20	34. 8. 41	35. 36. 59	37. 5. 17	38. 33. 34
	15	40. 1. 50	41. 30. 3	42. 58. 15	44. 26. 26	45. 54. 35	47. 22. 42	48. 50. 49	50. 18. 54
	16	51. 46. 59	53. 15. 3	54. 43. 7	56. 11. 12	57. 39. 17	59. 7. 25	60, 35. 35	62. 3. 47
Antares.	17	63. 32. 1	65. 0. 17	66. 28. 36	67. 57. 0	69. 25. 28	70. 54. 2	72. 22. 42	73. 51. 29
	18	75. 20. 21	76. 49. 20	78. 18. 27	79. 47. 43	81. 17. 6	82. 46. 40	84. 16. 24	85. 46. 18
	19	87. 16. 23	88. 46. 39	90. 17. 7	91. 47. 48	93. 18. 41	94. 49. 48	96. 21. 11	97. 52. 47
	20	99. 24. 39	100. 56. 46	102. 29. 10	104. 1. 50	105. 34. 47	107. 8. 1	108. 41. 33	110. 15. 24
	21	111. 49. 32							
	21	67. 26. 59	68. 44. 42	70. 3. 1	71. 21. 56	72. 41. 25	74. 1. 28	75. 22. 2	76. 43. 7
α Aquilæ.	22	78. 4. 44	79. 26. 50	80. 49. 23	82. 12. 23	83. 35. 50	84. 59. 42	86. 23. 57	87. 48. 36
	23	89. 13. 36							
Fomalhaut.	23	55. 25. 29	57. 0. 37	58. 36. 20	60, 12. 36	61. 49. 25	63. 26. 46	65. 4. 36	66. 42. 57
	24	68. 21. 48	70. 1. 7	71. 40, 52	73. 21. 4	75. 1. 43			
	28	- - -	- - -	- - -	- - -	- - -	- -	39. 35. 9	41. 18. 11
	29	43. 1. 9	44. 44. 1	46. 26. 45	48. 9. 22	49. 51. 51	51. 34. 11	53. 16. 22	54. 58. 22
The Sun.	30	56. 40. 13	58. 21. 52	60. 3. 20	61. 44. 36	63. 25. 39	65. 6. 30	66. 47. 7	68. 27. 32
	31	70. 7. 43	71. 47. 41	73. 27. 24	75. 6. 53	76. 46. 7	78. 25. 7	80. 3. 52	81. 42. 22
	J. 1.	83. 20. 38							

CONFIGURATIONS of the SATELLITES of JUPITER

at IV o'Clock *in the Morning.*

1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								

Configurations at Half an Hour past III *in the Morning.*

17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.
Th.	1	Nicomede. Oxf. Term [ends.
F.	2	
Sa.	3	
Sun.	4	*Whit-Sun. K. Geo. III. born.*
M.	5	*Whit-Mon. Pr. Ern. Aug.*
Tu.	6	*Whit-Tues.* [*b.* Boniface.
W.	7	
Th.	8	
F.	9	
Sa.	10	
Sun.	11	*Trin. Sun. St. Barnabas.*
M.	12	On mor. of H. Trin. 1 ret.
Tu.	13	
W.	14	Oxford Term begins.
Th.	15	
F.	16	Trinity Term begins.
Sa.	17	St. Alban.
Sun.	18	*1st Sunday after Trinity.*
M.	19	In 8 days of H. Trin. 2 ret.
Tu.	20	Tr. of Edw K. of W. Sax.
W.	21	
Th.	22	
F.	23	
Sa.	24	*Nativity of St. John Bap.*
Sun.	25	*2d Sunday after Trin.*
M.	26	In 15 days of H. Tr. 3 ret.
Tu.	27	
W.	28	
Th.	29	*St. Peter.*
F.	30	

Phases of the MOON.

	D. H. M.
☽ *First Quarter* ---	1. 12. 17
○ Full Moon ----	8. 23. 26
☾ *Last Quarter* ---	17. 3. 12
● New Moon ----	24. 4. 26
☽ *First Quarter* ----	30. 18. 54

Other *Phenomena.*

D. H. M.	
1. 17. 13	☽ ι ♌
2. 20. 50	☽ c ♍
3. - -	☿ Stationary
4. - -	☿ η ♊, ✱ 23′ S.
6. 19. 36	☽ 4 ad ζ ♎
7. 10. 22¼	I. 10′ S
7. 11. 31	E. of β ♏ ✱ 5′ S of ☽'s C.
7. 14. 0	☽ ν ♏
9. - -	☽ eclipsed, invisible.
10. 4. 11	☽ λ ♐
13. 20. 48	☽ ι ♑
16. 2. 0	☽ 2 ad ↓ ♒
16. 2. 8	☽ 3 ad ↓ ♒
17. 1. 56	☽ 33 ♓
20. 12. 29	☉ enters ♋
24. - -	☉ eclipsed, visible.
24. 17. 7	☽ ♀ an Occultation.
25. 4. 44	☽ ♂
26. 6. 15	☽ γ ♋
27. 15. 6	☽ η ♌
27. - -	☿ Stationary.
28. 23. 37	☽ ι ♌
30. 2. 41	☽ c ♍

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. North.	Equation of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Th.	1	2. 11. 21. 30	4. 39. 14, 0	22. 10. 2	2. 31, 1	9, 4
F.	2	2. 12. 18. 56	4. 43. 20, 0	22. 17. 44	2. 21, 7	9, 7
Sa.	3	2. 13. 16. 20	4. 47. 26, 2	22. 25. 2	2. 12, 0	10, 0
Sun.	4	2. 14. 13. 43	4. 51. 32, 8	22. 31. 57	2. 2, 0	10, 3
M.	5	2. 15. 11 5.	4. 55. 39, 7	22. 38. 29	1. 51, 7	10, 5
Tu.	6	2. 16. 8. 25	4. 59. 46, 8	22. 44. 37	1. 41, 2	10, 9
W.	7	2. 17. 5. 45	5. 3. 54, 3	22. 50. 21	1. 30, 3	11, 2
Th.	8	2. 18. 3. 4	5. 8. 2, 1	22. 55. 41	1. 19, 1	11, 4
F.	9	2. 19. 0. 22	5. 12. 10, 1	23. 0. 36	1. 7, 7	11, 7
Sa.	10	2. 19. 57. 39	5. 16. 18, 4	23. 5. 8	0. 56, 0	11, 9
Sun.	11	2. 20. 54. 56	5. 20. 26, 9	23. 9. 15	0. 44, 1	12, 1
M.	12	2. 21. 52. 12	5. 24. 35, 6	23. 12. 58	0. 32, 0	12, 3
Tu.	13	2. 22. 49. 28	5. 28. 44, 4	23. 16. 16	0. 19, 7	12, 5
W.	14	2. 23. 46. 43	5. 32. 53, 5	23. 19. 10	0. 7, 2	12, 6
Th.	15	2. 24. 43. 59	5. 37. 2, 7	23. 21. 39	*Add* 5, 4	12, 7
F.	16	2. 25. 41. 14	5. 41. 12, 0	23. 23. 43	0. 18, 1	12, 8
Sa.	17	2. 26. 38. 29	5. 45. 21, 4	23. 25. 23	0. 30, 9	13, 0
Sun.	18	2. 27. 35. 44	5. 49. 31, 0	23. 26. 38	0. 43, 9	13, 0
M.	19	2. 28. 32. 59	5. 53. 40, 5	23. 27. 28	0. 56, 9	13, 0
Tu.	20	2. 29. 30. 14	5. 57. 50, 2	23. 27. 53	1. 9, 9	13, 1
W.	21	3. 0. 27. 28	6. 1. 59, 8	23. 27. 54	1. 23, 0	13, 0
Th.	22	3. 1. 24. 43	6. 6. 9, 4	23. 27. 29	1. 36, 0	13, 0
F.	23	3. 2. 21. 58	6. 10. 19, 0	23. 26. 40	1. 49, 0	12, 9
Sa.	24	3. 3. 19. 12	6. 14. 28, 5	23. 25. 26	2. 1, 9	12, 7
Sun.	25	3. 4. 16. 26	6. 18. 37, 8	23. 23. 48	2. 14, 6	12, 7
M.	26	3. 5. 13. 40	6. 22. 47, 1	23. 21. 44	2. 27, 3	12, 5
Tu.	27	3. 6. 10. 54	6. 26. 56, 2	23. 19. 16	2. 39, 8	12, 3
W.	28	3. 7. 8. 7	6. 31. 5, 1	23. 16. 24	2. 52, 1	12, 1
Th.	29	3. 8. 5. 20	6. 35. 13, 7	23. 13. 7	3. 4, 2	11, 8
F.	30	3. 9. 2. 33	6. 39. 22, 2	23. 9. 25	3. 16, 0	

Days	Time of ☉'s Semidiam. passg Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 8,3	15. 48,8	2. 23,6	0. 006373	2. 23. 12
7	1. 8,6	15. 48,1	2. 23,3	0. 006672	2. 22. 53
13	1. 8,7	15. 47,5	2. 23,2	0. 006920	2. 22. 34
19	1. 8,8	15. 47,1	2. 23,0	0. 007117	2. 22. 15
25	1. 8,8	15. 46,9	2. 23,0	0. 007229	2. 21. 56

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Immersions.		*Immersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	6. 42. 18	2	1. 42. 42	3	11. 47. 56 Im.
4	1. 10. 24	5	15. 0. 48	3	14. 23. 59 E.
5	19. 38. 30	9	4. 18. 50	10	15. 47. 35 Im.
7	14. 6. 42	12	17. 36. 49	10	18. 22. 26 E.
9	8. 34. 49	16	6. 54. 44	17	19. 46. 58 Im.
11	3. 2. 58	19	20. 12. 41	17	22. 20. 34 E.
12	21. 30. 58	23	9. 30. 26	24	23. 46. 20 Im.
14	15. 59. 4	26	22. 48. 27	25	2. 18. 43 E.
16	10. 27. 6	30	12. 6. 31		
18	4. 55. 11				
19	23. 23. 12				
21	17. 51. 17			IV. Satellite.	
23	12. 19. 17				
25	6. 47. 17			7	4. 14. 4 Im.
27	1. 15. 24			7	6. 44. 41 E.
28	19. 43. 31			23	22. 30. 34 Im.
*30	14. 11. 27			24	0. 49. 52 E.

Days	THE PLANETS Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
	☿		*MERCURY.*		Inf. ☌ 16d. 8h.	
1	7. 13. 12	0. 20 N	3. 0. 19	0. 14 N	23. 42 N	1. 22
4	7. 21. 52	0. 44 S	3. 0. 37	0. 32 S	22. 56	1. 11
7	8. 0. 18	1. 45	3. 0. 16	1. 22	22. 6	0. 57
10	8. 8. 35	2. 42	2. 29. 17	2. 13	21. 15	0. 40
13	8. 16. 49	3. 36	2. 27. 51	3. 1	20. 26	0. 22
16	8. 25. 6	4. 26	2. 26. 11	3. 44	19. 41	0. 2
19	9. 3. 31	5. 11	2. 24. 30	4. 14	19. 8	23. 37
22	9. 12. 10	5. 50	2. 23. 5	4. 32	18. 46	23. 19
25	9. 21. 9	6. 22	2. 22. 8	4. 37	18. 37	23. 3
28	10. 0. 35	6. 45	2. 21. 48	4. 30	18. 44	22. 50
30	10. 7. 11	6. 55	2. 21. 59	4. 19	18. 55	22. 43
	♀		*VENUS.*			
1	2. 13. 37	0. 4 S	2. 12. 18	0. 2 S	22. 16 N	0. 4
7	2. 23. 18	0. 30 N	2. 19. 40	0. 12 N	23. 16	0. 11
13	3. 3. 0	1. 3	2. 27. 3	0. 26	23. 53	0. 18
19	3. 12. 43	1. 35	3. 4. 24	0. 40	24. 3	0. 25
25	3. 22. 27	2 4	3. 11. 47	0. 52	23. 49	0. 33
	♂		*MARS.*			
1	3. 16. 26	1. 34 N	3. 3. 1	1. 1 N	24. 27 N	1. 34
7	3. 19. 13	1. 37	3. 6. 56	1. 2	24. 19	1. 26
13	3. 21. 58	1. 40	3. 10. 50	1. 3	24. 5	1. 19
19	3. 24. 43	1. 42	3. 14. 43	1. 4	23. 43	1. 10
25	3. 27. 25	1. 44	3. 18. 35	1. 5	23. 15	1. 2
	♃		*JUPITER.*			
1	0. 3. 8	1. 19 S	0. 13. 9	1. 12 S	4. 6 N	20. 8
11	0. 4. 3	1. 19	0. 14. 51	1. 14	4. 43	19. 33
21	0. 4. 58	1. 19	0. 16. 21	1. 16	5. 16	18. 57
	♄		*SATURN.* ☌ 22d. 0h. ¼			
1	3. 0. 38	0. 55 S	2. 28. 42	0. 49 S	22. 39 N	1. 15
11	3. 1. 1	0. 54	3. 0. 0	0. 48	22. 40	0. 39
21	3. 1. 23	0. 53	3. 1. 18	0. 47	22. 40	0. 4
	♅		*GEORGIAN.*			
1	5. 12. 7	0. 46 N	5. 8. 55	0. 46 N	8. 57 N	6. 3
11	5. 12. 15	0. 46	5. 9. 7	0. 46	8. 52	5. 23
21	5. 12. 22	0. 46	5. 9. 23	0. 45	8. 46	4. 42

Days of the Week.	Days of the Month.	THE MOON'S Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Th.	1	5. 4. 40. 35	5. 11. 41. 16	5. 1. 31 N	5. 11. 9 N
F.	2	5. 18. 38. 2	5. 25. 30. 46	5. 16. 8	5. 16. 31
Sa.	3	6. 2. 19. 28	6. 9. 4. 7	5. 12. 26	5. 4. 3
Sun.	4	6. 15. 44. 49	6. 22. 21. 35	4. 51. 38	4. 35. 26
M.	5	6. 28. 54. 33	7. 5. 23. 47	4. 15. 47	3. 53. 0
Tu.	6	7. 11. 49. 28	7. 18. 11. 40	3. 27. 28	2. 59. 33
W.	7	7. 24. 30. 36	8. 0. 46. 21	2. 29. 40	1. 58. 13
Th.	8	8. 6. 59. 6	8. 13. 9. 0	1. 25. 36	0. 52. 12 N
F.	9	8. 19. 16. 14	8. 25. 20. 58	0. 18. 27 N	0. 15. 18 S
Sa.	10	9. 1. 23. 28	9. 7. 23. 56	0. 48. 41 S	1. 21. 20
Sun.	11	9. 13. 22. 38	9. 19. 19. 54	1. 52. 55	2. 23. 9
M.	12	9. 25. 16. 0	10. 1. 11. 21	2. 51. 42	3. 18. 22
Tu.	13	10. 7. 6. 16	10. 13. 1. 13	3. 42. 51	4. 4. 59
W.	14	10. 18. 56. 37	10. 24. 53. 0	4. 24. 29	4. 41. 13
Th.	15	11. 0. 50. 46	11. 6. 50. 29	4. 54. 58	5. 5. 35
F.	16	11. 12. 52. 41	11. 18. 57. 53	5. 12. 56	5. 16. 50
Sa.	17	11. 25. 6. 37	0. 1. 19. 26	5. 17. 10	5. 13. 50
Sun.	18	0. 7. 36. 50	0. 13. 59. 20	5. 6. 42	4. 55. 44
M.	19	0. 20. 27. 23	0. 27. 1. 19	4. 40. 52	4. 22. 9
Tu.	20	1. 3. 41. 29	1. 10. 28. 7	3. 59. 35	3. 33. 21
W.	21	1. 17. 21. 15	1. 24. 20. 55	3. 3. 36	2. 30. 41
Th.	22	2. 1. 26. 53	2. 8. 38. 48	1. 54. 56	1. 16. 52 S
F.	23	2. 15. 56. 11	2. 23. 18. 19	0. 37. 5 S	0. 3. 43 N
Sa.	24	3. 0. 44. 24	3. 8. 13. 29	0. 44. 50 N	1. 25. 24
Sun.	25	3. 15. 44. 30	3. 23. 16. 21	2. 4. 40	2. 41. 49
M.	26	4. 0. 47. 55	4. 8. 18. 7	3. 16. 5	3. 46. 52
Tu.	27	4. 15. 45. 51	4. 23. 10. 17	4. 13. 34	4. 35. 48
W.	28	5. 0. 30. 36	5. 7. 46. 6	4. 53. 18	5. 5. 53
Th.	29	5. 14. 56. 22	5. 22. 0. 59	5. 13. 30	5. 16. 14
F.	30	5. 28. 59. 50	6. 5. 52. 49	5. 14. 14	5. 7. 44

Days of the Week.	Days of the Month.	THE MOON's Age.	Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M,	D. M.	D. M.
Th.	1	8	6. 7	158.26	165. 8	14.29 N	11.59 N
F.	2	9	6.57	171.38	177.59	9.21	6.38
Sa.	3	10	7.44	184.12	190.20	3.51 N	1. 4 N
Sun.	4	11	8.29	196.23	202.23	1.43 S	4.27 S
M.	5	12	9.15	208.23	214.25	7. 7	9.40
Tu.	6	13	10. 1	220.28	226.35	12. 6	14.23
W.	7	14	10.48	232.47	239. 3	16.30	18.25
Th.	8	15	11.37	245.24	251.51	20. 6	21.33
F.	9	16	12.26	258.21	264.55	22.44	23.38
Sa.	10	17	13.17	271.32	278. 9	24.16	24.37
Sun.	11	18	14. 7	284.45	291.18	24.40	24.26
M.	12	19	14.56	297.48	304.13	23.55	23. 8
Tu.	13	20	15.43	310.32	316.44	22. 6	20.50
W.	14	21	16.28	322.50	328.49	19.21	17.39
Th.	15	22	17.12	334.43	340.31	15.47	13.44
F.	16	23	17.55	346.16	351.57	11.33	9.13
Sa.	17	24	18.37	357.37	3.18	6.48	4.16 S
Sun.	18	25	19.21	9. 1	14.47	1.40 S	0.59 N
M.	19	26	20. 6	20.39	26.39	3.40 N	6.21
Tu.	20	27	20.55	32.49	39.11	9. 0	11.36
W.	21	28	21.48	45.46	52.37	14. 6	16.27
Th.	22	29	22.46	59.44	67. 8	18.36	20.30
F.	23	30	23.48	74.48	82.42	22. 6	23.22
Sa.	24	1	0	90.49	99. 3	24.13	24.38
Sun.	25	2	0.53	107.21	115.37	24.36	24. 7
M.	26	3	1.57	123 47	131.47	23.11	21.51
Tu.	27	4	2.58	139.34	147. 6	20.10	18. 9
W.	28	5	3.55	154.23	161.24	15.52	13.23
Th.	29	6	4.47	168.11	174.46	10.45	8. 1
F.	30	7	5.36	181.10	187.26	5.12	2.22

Days of the Week.	Days of the Month.	THE MOON's Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
Th.	1	16. 8	16. 3	59. 11	58. 54	4831	4852
F.	2	15. 58	15. 53	58. 37	58. 19	4872	4895
Sa.	3	15. 49	15. 44	58. 1	57. 43	4917	4940
Sun.	4	15. 39	15. 35	57. 26	57. 10	4961	4981
M.	5	15. 30	15. 26	56. 53	56. 37	5003	5023
Tu.	6	15. 21	15. 17	56. 21	56. 6	5044	5063
W.	7	15. 13	15. 10	55. 51	55. 38	5082	5099
Th.	8	15. 6	15. 3	55. 25	55. 13	5116	5132
F.	9	15. 0	14. 57	55. 1	54. 51	5148	5161
Sa.	10	14. 54	14. 52	54. 41	54. 33	5174	5185
Sun.	11	14. 50	14. 48	54. 26	54. 20	5194	5202
M.	12	14. 47	14. 46	54. 15	54. 13	5209	5211
Tu.	13	14. 46	14. 47	54. 13	54. 14	5211	5210
W.	14	14. 48	14. 49	54. 17	54. 23	5206	5198
Th.	15	14. 51	14. 54	54. 31	54. 41	5187	5174
F.	16	14. 58	15. 2	54. 54	55. 9	5157	5137
Sa.	17	15. 6	15. 12	55. 26	55. 46	5115	5089
Sun.	18	15. 18	15. 24	56. 8	56. 32	5060	5029
M.	19	15. 31	15. 38	56. 57	57. 24	4998	4964
Tu.	20	15. 46	15. 54	57. 52	58. 20	4928	4893
W.	21	16. 1	16. 9	58. 48	59. 15	4859	4826
Th.	22	16. 16	16. 22	59. 41	60. 5	4794	4765
F.	23	16. 28	16. 33	60. 26	60. 43	4740	4719
Sa.	24	16. 36	16. 39	60. 56	61. 5	4704	4693
Sun.	25	16. 40	16. 40	61. 10	61. 10	4687	4687
M.	26	16. 39	16. 37	61. 6	60. 58	4692	4702
Tu.	27	16. 34	16. 29	60. 46	60. 31	4716	4734
W.	28	16. 25	16. 19	60. 13	59. 53	4755	4779
Th.	29	16. 13	16. 7	59. 31	59. 7	4806	4835
F.	30	16. 0	15. 53	58. 43	58. 19	4865	4895

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	IIIh.	VIh.	IXh.	*Midnight.*	XVh.	XVIIIh.	XXIh.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Spica ♍.	1	46. 49. 39	45. 5. 55	43. 22. 29	41. 39. 22	39. 56. 37	38. 14. 14	36. 32. 16	34. 50. 43
	2	33. 9. 37	31. 28. 53	29. 48. 45	28. 9. 10	26. 30. 12	24. 51. 54	23. 14. 20	21. 37. 33
	3	20. 1. 37							
Antares.	3	65. 15. 44	63. 35. 16	61. 55. 3	60. 15. 6	58. 35. 24	56. 55. 58	55. 16. 47	53. 37. 52
	4	51. 59. 13	50. 20. 50	48. 42. 43	47. 4. 52	45. 27. 17	43. 49. 57	42. 12. 56	40. 36. 10
	5	38. 59. 43	37. 23. 32	35. 47. 42	34. 12. 11	32. 37. 0	31. 2. 11	29. 27. 44	27. 53. 41
	6	26. 20. 1							
α Aquilæ.	6	77. 3. 4	75. 42. 59	74. 23. 15	73. 3. 54	71. 44. 57	70. 26. 26	69. 8. 23	67. 50. 49
	7	66. 33. 44	65. 17. 10	64. 1. 11	62. 45. 48	61. 31. 1	60. 16. 54	59. 3. 28	57. 50. 45
	8	56. 38. 48							
Fomalhaut.	8	84. 56. 17	83. 26. 56	81. 57. 46	80. 28. 47	78. 59. 59	77. 31. 23	76. 2. 58	74. 34. 46
	9	73. 6. 46	71. 38. 59	70. 11. 25	68. 44. 4	67. 16. 56	65. 50. 1	64. 23. 21	62. 56. 57
	10	61. 30. 44	60. 4. 49	58. 39. 11	57. 13. 48	55. 48. 42			
α Pegasi.	10	- - -	- - -	- - -	- - -	74. 42. 32	73. 21. 21	72. 0. 23	70. 39. 41
	11	69. 19. 13	67. 59. 1	66. 39. 7	65. 19. 31	64. 0. 13	62. 41. 14	61. 22. 36	60. 4. 21
	12	58. 46. 26	57. 28. 56	56. 11. 50	54. 55. 10	53. 38. 57			
α Arietis.	12	- - -	- - -	- - -	- - -	94. 8. 35	92. 42. 22	91. 16. 10	89. 50. 0
	13	88. 23. 51	86. 57. 44	85. 31. 37	84. 5. 31	82. 39. 26	81. 13. 22	79. 47. 17	78. 21. 11
	14	76. 55. 9	75. 29. 4	74. 2. 57	72. 36. 51	71. 10. 43	69. 44. 35	68. 18. 25	66. 52. 14

Stars Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	15	65. 26. 1	63. 59. 46	62. 33. 29	61. 7. 11	59. 40. 50	58. 14. 27	56. 48. 2	55. 21. 36
	16	53. 55. 9	52. 28. 40	51. 2. 10	49. 35. 41	48. 9. 12	46. 42. 44	45. 16. 19	43. 49. 56
	17	42. 23. 36							
The Sun.	14	- - -	- - -	- - -	120. 37. 45	119. 15. 53	117. 53. 57	116. 31. 56	115. 9. 50
	15	113. 47. 38	112. 25. 19	111. 2. 52	109. 40. 19	108. 17. 37	106. 54. 47	105. 31. 47	104. 8. 38
	16	102. 45. 19	101. 21. 49	99. 58. 7	98. 34. 13	97. 10. 8	95. 45. 49	94. 21. 16	92. 56. 29
	17	91. 31. 28	90. 6. 11	88. 40. 38	87. 14. 49	85. 48. 43	84. 22. 20	82. 55. 38	81. 28. 38
	18	80. 1. 19	78. 33. 40	77. 5. 40	75. 37. 20	74. 8. 39	72. 39. 36	71. 10. 11	69. 40. 23
	19	68. 10. 13	66. 39. 39	65. 8. 42	63. 37. 21	62. 5. 36	60. 33. 26	59. 0. 51	57. 27. 51
	20	55. 54. 26	54. 20. 34	52. 46. 16	51. 11. 33	49. 36. 23	48. 0. 48	46. 24. 47	44. 48. 20
	21	43. 11. 27	41. 34. 9	39. 56. 24					
Regulus.	25	- - -	- - -	- - -	- - -	33. 47. 40	31. 55. 31	30. 3 38	28. 11. 59
	26	26. 20. 36	24. 29. 22	22. 38. 40	20. 48. 32	18. 59. 4			
Spica ♍.	26	- - -	- - -	- - -	- - -	72. 54. 8	71. 2. 49	69. 11. 42	67. 20. 49
	27	65. 30. 10	63. 39. 46	61. 49. 40	59. 59. 52	58. 10. 21	56. 21. 10	54. 32. 19	52. 43. 50
	28	50. 55. 44	49. 7. 57	47. 20. 36	45. 33. 40	43. 47. 8	42. 1. 1	40. 15. 23	38. 30. 14
	29	36. 45. 34	35. 1. 26	33. 17. 50	31. 34. 50	29. 52. 23			
Antares.	29	- - -	- - -	- - -	- - -	75. 27. 49	73. 43. 37	71. 59. 46	70. 16. 19
	30	68. 33. 13	66. 50. 30	65. 8. 8	63. 26. 10	61. 44. 33	60. 3. 19	58. 22. 26	56. 41. 56
	J. 1	55. 1. 48							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	83. 20. 38	84. 58. 38	86. 36. 22	88. 13. 51	89. 51. 5	91. 28. 4	93. 4. 47	94. 41. 16
	2	96. 17. 29	97. 53. 27	99. 29. 10	101. 4. 38	102. 39. 51	104. 14. 49	105. 49. 32	107. 24. 0
	3	108. 58. 14	110. 32. 12	112. 5. 57	113. 39. 27	115. 12. 44	116. 45. 46	118. 18. 35	119. 51. 10
	4	121. 23. 32							
Regulus.	1	- - -	- - -	- - -	- - -	15. 24. 1	17. 4. 32	18. 45. 17	20. 26. 12
	2	22. 7. 15	23. 48. 25	25. 29. 33	27. 10. 42	28. 51. 49	30. 32. 46	32. 13. 34	33. 54. 14
	3	35. 34. 46	37. 15. 5	38. 55. 13	40. 35. 10	42. 14. 57	43. 54. 32	45. 33. 55	47. 13. 6
	4	48. 52. 6	50. 30. 54	52. 9. 29	53. 47. 52	55. 26. 4	57. 4. 3	58. 41. 51	60. 19. 26
	5	61. 56. 50	63. 34. 1	65. 11. 1	66. 47. 49	68. 24. 25	70. 0. 50	71. 37. 3	73. 13. 5
	6	74. 48. 56							
Spica ♍.	6	21. 30. 53	23. 2. 17	24. 33. 57	26. 5. 51	27. 37. 57	29. 10. 13	30. 42. 35	32. 15. 0
	7	33. 47. 32	35. 19. 59	36. 52. 24	38. 24. 47	39. 57. 8	41. 29. 23	43. 1. 33	44. 33. 38
	8	46. 5. 38	47. 37. 31	49. 9. 17	50. 40. 57	52. 12. 30	53. 43. 57	55. 15. 17	56. 46. 29
	9	58. 17. 33	59. 48. 30	61. 19. 20	62. 50. 2	64. 20. 36			
Antares.	9	- - -	- - -	- - -	- - -	18. 53. 12	20. 20. 3	21. 47. 14	23. 14. 43
	10	24. 42. 27	26. 10. 24	27. 38. 30	29. 6. 44	30. 35. 5	32. 3. 26	33. 31. 47	35. 0. 11
	11	36. 28. 36	37. 56. 59	39. 25. 21	40. 53. 43	42. 22. 3	43. 50. 21	45. 18. 37	46. 46. 52
	12	48. 15. 6	49. 43. 18	51. 11. 28	52. 39. 38	54. 7. 46	55. 35. 52	57. 3. 58	58. 32. 3

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	13	60. 0. 8	61. 28. 13	62. 56. 19	64. 24. 25	65. 52. 32	67. 20. 40	68. 48. 50	70. 17. 3
	14	71. 45. 17	73. 13. 35	74. 41. 57	76. 10. 23	77. 38. 53	79. 7. 27	80. 36. 6	82. 4. 51
	15	83. 33. 41	85. 2. 38	86. 31. 42	88. 0. 54	89. 30. 14	90. 59. 42	92. 29. 21	93. 59. 8
	16	95. 29. 6	96. 59. 14	98. 29. 33	100. 0. 4	101. 30. 47	103. 1. 42	104. 32. 51	106. 4. 14
	17	107. 35. 50							
α Aquilæ.	17	64. 1. 43	65. 16. 12	66. 31. 17	67. 46. 57	69. 3. 13	70. 20. 2	71. 37. 22	72. 55. 15
	18	74. 13. 39	75. 32. 33	76. 51. 55	78. 11. 46	79. 32. 6	80. 52. 52	82. 14. 5	83. 35. 43
	19	84. 57. 46							
Fomalhaut.	19	50. 40. 2	52. 11. 19	53. 43. 13	55. 15. 45	56. 48. 54	58. 22. 38	59. 56. 57	61. 31. 51
	20	63. 7. 19	64. 43. 20	66. 19. 54	67. 57. 0	69. 34. 37	71. 12. 45	72. 51. 23	74. 30. 31
	21	76. 10. 9							
α Pegasi.	21	60. 2. 19	61, 34. 3	63. 6. 33	64. 39. 47	66. 13. 43	67. 48. 20	69. 23. 34	70. 59. 25
	22	72. 35. 53	74. 12. 54	75. 50. 24	77. 28. 25	79. 6. 56	80. 45. 52	82. 25. 14	84. 4. 59
	23	85. 45. 6							
The Sun.	27	39. 46. 13	41. 30. 23	43. 14. 16	44. 57. 54	46. 41. 16	48. 24. 20	50. 7. 7	51. 49. 36
	28	53. 31. 47	55. 13. 38	56. 55. 8	58. 36. 20	60. 17. 11	61. 57. 42	63. 37. 52	65. 17. 41
	29	66. 57. 9	68. 36. 14	70. 14. 58	71. 53. 21	73. 31. 22	75. 9. 1	76. 46. 19	78. 23. 15
	30	79. 59. 50	81. 36. 2	83. 11. 53	84. 47. 24	86. 22. 33	87. 57. 21	89. 31. 48	91. 5. 54
	J. 1	92. 39. 40							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	83. 20. 38	84. 58. 38	86. 36. 22	88. 13. 51	89. 51. 5	91. 28. 4	93. 4. 47	94. 41. 16
	2	96. 17. 29	97. 53. 27	99. 29. 10	101. 4. 38	102. 39. 51	104. 14. 49	105. 49. 32	107. 24. 0
	3	108. 58. 14	110. 32. 12	112. 5. 57	113. 39. 27	115. 12. 44	116. 45. 46	118. 18. 35	119. 51. 10
	4	121. 23. 32							
Regulus.	1	- - -	- - -	- - -	- - -	15. 24. 1	17. 4. 32	18. 45. 17	20. 26. 12
	2	22. 7. 15	23. 48. 25	25. 29. 33	27. 10. 42	28. 51. 49	30. 32. 46	32. 13. 34	33. 54. 14
	3	35. 34. 46	37. 15. 5	38. 55. 13	40. 35. 10	42. 14. 57	43. 54. 32	45. 33. 55	47. 13. 6
	4	48. 52. 6	50. 30. 54	52. 9. 29	53. 47. 52	55. 26. 4	57. 4. 3	58. 41. 51	60. 19. 26
	5	61. 56. 50	63. 34. 1	65. 11. 1	66. 47. 49	68. 24. 25	70. 0. 50	71. 37. 3	73. 13. 5
	6	74. 48. 56							
Spica ♍.	6	21. 30. 53	23. 2. 17	24. 33. 57	26. 5. 51	27. 37. 57	29. 10. 13	30. 42. 35	32. 15. 0
	7	33. 47. 32	35. 19. 59	36. 52. 24	38. 24. 47	39. 57. 8	41. 29. 23	43. 1. 33	44. 33. 38
	8	46. 5. 38	47. 37. 31	49. 9. 17	50. 40. 57	52. 12. 30	53. 43. 57	55. 15. 17	56. 46. 29
	9	58. 17. 33	59. 48. 30	61. 19. 20	62. 50. 2	64. 20. 36			
Antares.	9	- - -	- - -	- - -	- - -	18. 53. 12	20. 20. 3	21. 47. 14	23. 14. 43
	10	24. 42. 27	26. 10. 24	27. 38. 30	29. 6. 44	30. 35. 5	32. 3. 26	33. 31. 47	35. 0. 11
	11	36. 28. 36	37. 56. 59	39. 25. 21	40. 53. 43	42. 22. 3	43. 50. 21	45. 18. 37	46. 46. 52
	12	48. 15. 6	49. 43. 18	51. 11. 28	52. 39. 38	54. 7. 46	55. 35. 52	57. 3. 58	58. 32. 3

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	13	60. 0. 8	61. 28. 13	62. 56. 19	64. 24. 25	65. 52. 32	67. 20. 40	68. 48. 50	70. 17. 3
	14	71. 45. 17	73. 13. 35	74. 41. 57	76. 10. 23	77. 38. 53	79. 7. 27	80. 36. 6	82. 4. 51
	15	83. 33. 41	85. 2. 38	86. 31. 42	88. 0. 54	89. 30. 14	90. 59. 42	92. 29. 21	93. 59. 8
	16	95. 29. 6	96. 59. 14	98. 29. 33	100. 0. 4	101. 30. 47	103. 1. 42	104. 32. 51	106. 4. 14
	17	107. 35. 50							
α Aquilæ.	17	64. 1. 43	65. 16. 12	66. 31. 17	67. 46. 57	69. 3. 13	70. 20. 2	71. 37. 22	72. 55. 15
	18	74. 13. 39	75. 32. 33	76. 51. 55	78. 11. 46	79. 32. 6	80. 52. 52	82. 14. 5	83. 35. 43
	19	84. 57. 46							
Fomalhaut.	19	50. 40. 2	52. 11. 19	53. 43. 13	55. 15. 45	56. 48. 54	58. 22. 38	59. 56. 57	61. 31. 51
	20	63. 7. 19	64. 43. 20	66. 19. 54	67. 57. 0	69. 34. 37	71. 12. 45	72. 51. 23	74. 30. 31
	21	76. 10. 9							
α Pegasi.	21	60. 2. 19	61, 34. 3	63. 6. 33	64. 39. 47	66. 13. 43	67. 48. 20	69. 23. 34	70. 59. 25
	22	72. 35. 53	74. 12. 54	75. 50. 24	77. 28. 25	79. 6. 56	80. 45. 52	82. 25. 14	84. 4. 59
	23	85. 45. 6							
The Sun.	27	39. 46. 13	41. 30. 23	43. 14. 16	44. 57. 54	46. 41. 16	48. 24. 20	50. 7. 7	51. 49. 36
	28	53. 31. 47	55. 13. 38	56. 55. 8	58. 36. 20	60. 17. 11	61. 57. 42	63. 37. 52	65. 17. 41
	29	66. 57. 9	68. 36. 14	70. 14. 58	71. 53. 21	73. 31. 22	75. 9. 1	76. 46. 19	78. 23. 15
	30	79. 59. 50	81. 36. 2	83. 11. 53	84. 47. 24	86. 22. 33	87. 57. 21	89. 31. 48	91. 5. 54
	J. 1	92. 39. 40							

CONFIGURATIONS of the SATELLITES of JUPITER

at Half an Hour past II o'Clock *in the Morning*.

| | | |

Days of the Week.	Days of the Month.	*Sundays, Holidays, Terms, &c.*
Sa.	1	[Mary.
Sun.	2	*3d Sun. aft. Trin.* Vis. B. V.
M.	3	In 3 weeks of H. T. 4 ret.
Tu.	4	Camb. Com. Tr. of St. Ma.
W.	5	Trinity Term ends.
Th.	6	
F.	7	Cambridge Term ends.
Sa.	8	
Sun.	9	*4th Sunday after Trinity.*
M.	10	Oxford Act.
Tu.	11	
W.	12	
Th.	13	
F.	14	
Sa.	15	Swithin. Oxf. Ter. ends.
Sun.	16	*5th Sunday after Trinity.*
M.	17	
Tu.	18	
W.	19	
Th.	20	Margaret.
F.	21	
Sa.	22	Magdalen.
Sun.	23	*6th Sunday after Trinity.*
M.	24	
Tu.	25	*St. James.*
W.	26	St. Anne.
Th.	27	
F.	28	
Sa.	29	
Sun.	30	*7th Sunday after Trinity.*
M.	31	

Phases of the MOON.

	D. H. M.
○ Full Moon -----	8. 14. 7
☾ *Last Quarter* ----	16. 16. 8
● New Moon -----	23. 11. 25
☽ *First Quarter* ----	30. 4. 7

Other *Phenomena.*

D. H. M.

2. 10. 50 Im. ×♍ ✱ 15′⅔S. of ☽'s C.
2. 10. 57⅔ Em. 15′ S.
4. 1. 13 ☽ 4 ad ζ ♎
4. 16. 57 ☽ β ♏
4. 19. 46 ☽ ν ♏
6. 6. 32 ☽ β Ophiuchi.
7. 10. 3½ Im. λ ♐ ✱ 14′⅓S. of ☽'s C
7. 10. 34½ Em. 13′ S.
11. 3. 11 ☽ ι ♑
13. 8. 34 ☽ 2 ad ♃ ♒
13. 8. 42 ☽ 3 ad ♃ ♒
13 - - ☿ μ ♊, ✱ 51′ North.
14. 8. 45 ☽ 33 ♓
15 - - ☿ ♄ diff. Lat. 35′
19. 16. 51 ☽ ε ♉
20. 6. 56 ☽ ι ♉
21. 0. 40 ☽ 132 ♉
21. 23. 21 ☉ enters ♌
22 - - ☿ δ ♊, ✱ 21′ S.
26. 8. 13 ☽ ι ♌
27. 10. 24 ☽ c ♍
29. 16. 49 ☽ κ ♍
31. 7. 2 ☽ 4 ad ζ ♎
31 - - ♀ α ♌, ✱ 1° 3′ S.
31. 22. 41 ☽ β ♏

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. North.	Equation of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sa.	1	3. 9. 59. 45	6. 43. 30, 3	23. 5. 20	3. 27, 9	11, 3
Sun.	2	3. 10. 56. 57	6. 47. 38, 3	23. 0. 50	3. 39, 2	10, 9
M.	3	3. 11. 54. 8	6. 51. 45, 8	22. 55. 56	3. 50, 1	10, 6
Tu.	4	3. 12. 51. 19	6. 55. 52, 9	22. 50. 38	4. 0, 7	10, 3
W.	5	3. 13. 48. 30	6. 59. 59, 8	22. 44. 56	4. 11, 0	10, 0
Th.	6	3. 14. 45. 41	7. 4. 6, 3	22. 38. 50	4. 21, 0	9, 6
F.	7	3. 15. 42. 52	7. 8. 12, 5	22. 32. 21	4. 30, 6	9, 1
Sa.	8	3. 16. 40. 3	7. 12. 18, 3	22. 25. 29	4. 39, 7	8, 8
Sun.	9	3. 17. 37. 14	7. 16. 23, 6	22. 18. 14	4. 48, 5	8, 4
M.	10	3. 18. 34. 26	7. 20. 28, 6	22. 10. 36	4. 56, 9	7, 9
Tu.	11	3. 19. 31. 38	7. 24. 33, 1	22. 2. 34	5. 4, 8	7, 5
W.	12	3. 20. 28. 50	7. 28. 37, 1	21. 54. 10	5. 12, 3	7, 0
Th.	13	3. 21. 26. 3	7. 32. 40, 7	21. 45. 23	5. 19, 3	6, 6
F.	14	3. 22. 23. 16	7. 36. 43, 9	21. 36. 14	5. 25, 9	6, 1
Sa.	15	3. 23. 20. 30	7. 40. 46, 6	21. 26. 43	5. 32, 0	5, 6
Sun.	16	3. 24. 17. 45	7. 44. 48, 8	21. 16. 50	5. 37, 6	5, 2
M.	17	3. 25. 15. 1	7. 48. 50, 5	21. 6. 35	5. 42, 8	4, 7
Tu.	18	3. 26. 12. 18	7. 52. 51, 7	20. 55. 59	5. 47, 5	4, 1
W.	19	3. 27. 9. 36	7. 56. 52, 4	20. 45. 1	5. 51, 6	3, 6
Th.	20	3. 28. 6. 54	8. 0. 52, 5	20. 33. 42	5. 55, 2	3, 0
F.	21	3. 29. 4. 13	8. 4. 52, 1	20. 22. 2	5. 58, 2	2, 5
Sa.	22	4. 0. 1. 33	8. 8. 51, 2	20. 10. 3	6. 0, 7	1, 9
Sun.	23	4. 0. 58. 54	8. 12. 49, 7	19. 57. 42	6. 2, 6	1, 4
M.	24	4. 1. 56. 16	8. 16. 47, 6	19. 45. 1	6. 4, 0	0, 8
Tu.	25	4. 2. 53. 39	8. 20. 45, 0	19. 32. 1	6. 4, 8	0, 2
W.	26	4. 3. 51. 2	8. 24. 41, 8	19. 18. 42	6. 5, 0	0, 4
Th.	27	4. 4. 48. 26	8. 28. 37, 9	19. 5. 3	6. 4, 6	1, 1
F.	28	4. 5. 45. 50	8. 32. 33, 4	18. 51. 5	6. 3, 5	1, 7
Sa.	29	4. 6. 43. 15	8. 36. 28, 3	18. 36. 48	6. 1, 8	2, 3
Sun.	30	4. 7. 40. 40	8. 40. 22, 5	18. 22. 14	5. 59, 5	2, 9
M.	31	4. 8. 38. 6	8. 44. 16, 1	18. 7. 21	5. 56, 6	

Days	Time of ☉'s Semidiam. pass^g Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☊'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 8,6	15.46,9	2.23,0	0.007243	2. 21.37
7	1. 8,3	15.47,0	2.23,0	0.007181	2. 21.18
13	1. 8,0	15.47,2	2.23,1	0.007071	2. 20.59
19	1. 7,6	15.47,6	2.23,2	0.006898	2. 20.40
25	1. 7,1	15.48,2	2.23,4	0.006644	2. 20.21

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Immersions.		*Immersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	8.39.36	4	1.24.37	2	3.45.46 Im.
4	3. 7.42	* 7	14.42.48	2	6.16.56 E.
5	21.35.48	11	4. 1. 0	9	7.45.27 Im.
7	16. 3.56	14	17.19.25	9	10.15.23 E.
9	10.32. 7	18	6.37.52	*16	11.45.25 Im.
11	5. 0.16	21	19.56.25	*16	14.14. 7 E.
12	23.28.27	25	9.15. 4	23	15.45.52 Im.
14	17.56.41	28	22.33.55	23	18.13.21 E.
*16	12.24.56			30	19.46.55 Im.
18	6.53.12			30	22.13. 9 E.
20	1.21.29			IV. Satellite.	
21	19.49.50				
*23	14.18.10				
25	8.46.33			10	16.48. 3 Im.
27	3.14.59			10	18.54.56 E.
28	21.43.26			*27	11. 8. 7 Im.
30	16.11.57			*27	13. 1.33 E.

Days	THE PLANETS					
	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D.M.	S. D. M.	D. M.	D. M.	H. M.
	☿ Gr. Elong. 9°. *MERCURY.*					
1	10. 10. 35	6. 58 S	2. 22. 12	4. 12 S	19. 3N	22. 41
4	10. 21. 19	6. 58	2. 23. 21	3. 45	19. 33	22. 34
7	11. 2. 56	6. 42	2. 25. 15	3. 12	20. 11	22. 31
10	11. 15. 36	6. 5	2. 27. 54	2. 34	20. 53	22. 31
13	11. 29. 28	5. 5	3. 1. 15	1. 54	21. 34	22. 34
16	0. 14. 39	3. 39	3. 5. 17	1. 12	22. 10	22. 40
19	1. 1. 12	1. 47 S	3. 9. 57	0. 32 S	22. 35	22. 49
22	1. 18. 58	0. 22 N	3. 15. 12	0. 6 N	22. 42	23. 1
25	2. 7. 36	2. 36	3. 20. 54	0. 39	22. 29	23. 15
28	2. 26. 32	4. 34	3. 26. 56	1. 7	21. 53	23. 29
31	3. 15. 7	6. 1	4. 3. 9	1. 27	20. 53	23. 44
	♀ *VENUS.*					
1	4. 2. 11	2. 30 N	3. 19. 9	1. 3 N	23. 8N	0. 40
7	4. 11. 57	2. 51	3. 26. 32	1. 12	22. 3	0. 47
13	4. 21. 42	3. 7	4. 3. 54	1. 20	20. 36	0. 54
19	5. 1. 28	3. 18	4. 11. 16	1. 26	18. 47	1. 0
25	5. 11. 13	3. 23	4. 18. 38	1. 29	16. 40	1. 5
	♂ *MARS.*					
1	4. 0. 9	1. 46 N	3. 22. 27	1. 6 N	22. 41N	0. 54
7	4. 2. 51	1. 47	3. 26. 19	1. 7	22. 0	0. 46
13	4. 5. 32	1. 48	4. 0. 10	1. 7	21. 14	0. 38
19	4. 8. 12	1. 49	4. 4. 0	1. 8	20. 23	0. 30
25	4. 10. 52	1. 50	4. 7. 50	1. 9	19. 27	0. 22
	♃ *JUPITER.*					□ 9°. 23¼h.
1	0. 5. 52	1. 19 S	0. 17. 37	1. 19 S	5. 44N	18. 21
11	0. 6. 48	1. 19	0. 18. 39	1. 21	6. 4	17. 44
21	0. 7. 43	1. 19	0. 19. 23	1. 24	6. 18	17. 6
	♄ *SATURN.*					
1	3. 1. 46	0. 52 S	3. 2. 36	0. 47 S	22. 40N	23. 24
11	3. 2. 8	0. 51	3. 3. 53	0. 46	22. 39	22. 49
21	3. 2. 31	0. 50	3. 5. 8	0. 45	22. 37	22. 14
	♅ *GEORGIAN.*					
1	5. 12. 30	0. 46 N	5. 9. 44	0. 45 N	8. 37N	4. 2
11	5. 12. 38	0. 46	5. 10. 9	0. 45	8. 28	3. 22
21	5. 12. 46	0. 46	5. 10. 38	0. 44	8. 16	2. 44

Days of the Week.	Days of the Month.	THE MOON'S Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sa.	1	6. 12. 40. 1	6. 19. 21. 31	4. 56. 59 N	4. 42. 20 N
Sun.	2	6. 25. 57. 38	7. 2. 28. 38	4. 24. 7	4. 2. 43
M.	3	7. 8. 54. 51	7. 15. 16. 37	3. 38. 28	3. 11. 48
Tu.	4	7. 21. 34. 22	7. 27. 48. 27	2. 43. 4	2. 12. 40
W.	5	8. 3. 59. 14	8. 10. 7. 6	1. 40. 59	1. 8. 22
Th	6	8. 16. 12. 23	8. 22. 15. 26	0. 35. 14 N	0. 1. 55 N
F.	7	8. 28. 16. 32	9. 4. 15. 58	0. 31. 14 S	1. 3. 49 S
Sa.	8	9. 10. 14. 2	9. 16. 11. 0	1. 35. 35	2. 6. 9
Sun.	9	9. 22. 7. 3	9. 28. 2. 34	2. 35. 15	3. 2. 36
M.	10	10. 3. 57. 42	10. 9. 52. 42	3. 27. 55	3. 50. 59
Tu.	11	10. 15. 47. 54	10. 21. 43. 32	4. 11. 33	4. 29. 25
W.	12	10. 27. 39. 57	11. 3. 37. 26	4. 44. 25	4. 56. 22
Th.	13	11. 9. 36. 20	11. 15. 37. 5	5. 5. 8	5. 10. 36
F.	14	11. 21. 40. 2	11. 27. 45. 36	5. 12. 39	5. 11. 12
Sa.	15	0. 3. 54. 17	0. 10. 6. 29	5. 6. 11	4. 57. 33
Sun.	16	0. 16. 22. 44	0. 22. 43. 28	4. 45. 18	4. 29. 25
M.	17	0. 29. 9. 13	1. 5. 40. 23	4. 9. 57	3. 47. 0
Tu.	18	1. 12. 17. 26	1. 19. 0. 40	3. 20. 41	2. 51. 13
W.	19	1. 25. 50. 25	2. 2. 46. 49	2. 18. 51	1. 43. 56
Th.	20	2. 9. 49. 58	2. 16. 59. 44	1. 6. 53 S	0. 28. 14 S
F.	21	2. 24. 15. 51	3. 1. 37. 52	0. 11. 25 N	0. 51. 22 N
Sa.	22	3. 9. 5. 6	3. 16. 36. 39	1. 30. 52	2. 9. 8
Sun.	23	3. 24. 11. 30	4. 1. 48. 30	2. 45. 20	3. 18. 44
M.	24	4. 9. 26. 18	4. 17. 3. 38	3. 48. 37	4. 14. 21
Tu.	25	4. 24. 39.	5. 2. 11. 26	4. 35. 29	4. 51. 38
W.	26	5. 9. 39. 33	5. 17. 2. 26	5. 2. 40	5. 8. 30
Th.	27	5. 24. 19. 20	6. 1. 29. 39	5. 9. 15	5. 5. 7
F.	28	6. 8. 33. 4	6. 15. 29. 23	4. 56. 23	4. 43. 25
Sa.	29	6. 22. 18. 38	6. 29. 0. 57	4. 26. 38	4. 6. 24
Sun.	30	7. 5. 36. 39	7. 12. 6. 11	3. 43. 14	3. 17. 31
M.	31	7. 18. 29. 57	7. 24. 48. 32	2. 49. 39	2. 20. 7

Days of the Week.	Days of the Month.	THE MOON'S Age.	Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Sa.	1	8	6.22	193.35	199.39	0.27 S	3.14 S
Sun.	2	9	7. 8	205.40	211.41	5.56	8.33
M.	3	10	7.54	217.42	223.45	11. 2	13.23
Tu.	4	11	8.40	229.52	236. 3	15.33	17.32
W.	5	12	9.28	242.19	248.40	19.19	20.52
Th.	6	13	10.17	255. 5	261.34	22.10	23.12
F.	7	14	11. 7	268. 7	274.41	23.58	24.27
Sa.	8	15	11.57	281.16	287.50	24.39	24.34
Sun.	9	16	12.46	294.21	300.48	24.12	23.33
M.	10	17	13.34	307.10	313.26	22.39	21.30
Tu.	11	18	14.20	319.35	325.38	20. 7	18.31
W.	12	19	15. 4	331.34	337.23	16.44	14.47
Th.	13	20	15.47	343. 8	348.48	12.41	10.27
F.	14	21	16.29	354.25	0. 1	8. 6	5.39
Sa.	15	22	17.11	5.37	11.14	3. 8 S	0.33 S
Sun.	16	23	17.55	16.55	22.41	2. 3 N	4.41 N
M.	17	24	18.41	28.35	34.38	7.17	9.51
Tu.	18	25	19.31	40.53	47.21	12.21	14.44
W.	19	26	20.25	54. 5	61. 5	16.59	19. 2
Th.	20	27	21.24	68.21	75.55	20.51	22.22
F.	21	28	22.27	83.44	91.47	23.32	24.19
Sa.	22	29	23.32	100. 0	108.18	24.40	24.34
Sun.	23	1	☌	116.37	124.52	24. 1	23. 0
M.	24	2	0.36	132.58	140.53	21.35	19.46
Tu.	25	3	1.37	148.34	155.59	17.38	15.14
W.	26	4	2.33	163.10	170. 7	12.37	9.51
Th.	27	5	3.25	176.51	183.24	6.59	4. 4 N
F.	28	6	4.14	189.48	196. 5	1. 9 N	1.45 S
Sa.	29	7	5. 2	202.17	208.26	4.34 S	7.18
Sun.	30	8	5.49	214.34	220.41	9.54	12.21
M.	31	9	6.36	226.51	233. 2	14.38	16.43

Days of the Week.	Days of the Month.	The Moon's Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
Sa.	1	15.47	15.41	57.55	57.32	4924	4953
Sun.	2	15.35	15.29	57.10	56.49	4981	5008
M.	3	15.23	15.18	56.29	56.10	5033	5058
Tu.	4	15.14	15. 9	55.53	55.37	5080	5100
W.	5	15. 5	15. 2	55.22	55. 9	5120	5137
Th.	6	14.58	14.55	54.57	54.46	5153	5167
F.	7	14.53	14.51	54.37	54.28	5179	5191
Sa.	8	14.49	14.47	54.21	54.16	5201	5207
Sun.	9	14.46	14.45	54.12	54. 9	5213	5217
M.	10	14.45	14.45	54. 7	54. 7	5219	5219
Tu.	11	14.45	14.46	54. 8	54.11	5218	5214
W.	12	14.47	14.49	54.16	54.22	5207	5199
Th.	13	14.51	14.54	54.30	54.41	5189	5174
F.	14	14.57	15. 1	54.53	55. 8	5158	5138
Sa.	15	15. 6	15.11	55.25	55.43	5116	5093
Sun.	16	15.16	15.23	56. 3	56.26	5067	5037
M.	17	15.29	15.37	56.51	57.17	5005	4972
Tu.	18	15.44	15.52	57.44	58.12	4938	4903
W.	19	15.59	16. 7	58.41	59. 9	4867	4833
Th.	20	16.14	16.21	59.36	60. 2	4800	4769
F.	21	16.28	16.34	60.26	60.47	4740	4715
Sa.	22	16.38	16.42	61. 4	61.17	4694	4679
Sun.	23	16.44	16.45	61.26	61.30	4669	4664
M.	24	16.45	16.43	61.28	61.22	4666	4673
Tu.	25	16.41	16.37	61.12	60.57	4685	4703
W.	26	16.32	16.26	60.39	60.17	4724	4751
Th.	27	16.19	16.12	59.53	59.27	4779	4811
F.	28	16. 5	15.57	59. 0	58.32	4844	4878
Sa.	29	15.49	15.42	58. 4	57.37	4913	4947
Sun.	30	15.35	15.28	57.11	56.46	4980	5012
M.	31	15.22	15.16	56.22	56. 1	5042	5069

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	55. 1. 48	53. 22. 4	51. 42. 41	50. 3. 39	48. 24. 58	46. 46. 39	45. 8. 42	43. 31. 7
	2	41. 53. 54	40. 17. 3	38. 40. 35	37. 4. 31	35. 28. 49	33. 53. 31	32. 18. 37	30. 44. 8
	3	29. 10. 3							
α Aquilæ.	3	79. 29. 53	78. 9. 33	76. 49. 34	75. 29. 58	74. 10. 46	72. 51. 59	71. 33. 38	70. 15. 45
	4	68. 58. 20	67. 41. 26	66. 25. 2	65. 9. 12	63. 53. 55	62. 39. 14	61. 25. 10	60. 11. 46
	5	58. 59. 1	57. 46. 59	56. 35. 44	55. 25. 17	54. 15. 39			
Fomalhaut.	5	- - -	- - -	- - -	- - -	81. 55. 12	80. 27. 1	78. 59. 1	77. 31. 12
	6	76. 3. 34	74. 36. 7	73. 8. 52	71. 41. 48	70. 14. 55	68. 48. 13	67. 21. 43	65. 55. 25
	7	64. 29. 19	63. 3. 26	61. 37. 47	60. 12. 21	58. 47. 9			
α Pegasi.	7	- - -	- - -	- - -	- - -	77. 32. 51	76. 11. 32	74. 50. 25	73. 29. 31
	8	72. 8. 48	70. 48. 17	69. 28. 1	68. 7. 59	66. 48. 12	65. 28. 41	64. 9. 27	62. 50. 32
	9	61. 31. 55	60. 13. 37	58. 55. 41	57. 38. 7	56. 20. 55			
α Arietis.	9	- - -	- - -	- - -	- - -	97. 11. 56	95. 45. 37	94. 19. 19	92. 53. 2
	10	91. 26. 48	90. 0. 35	88. 34. 23	87. 8. 12	85. 42. 2	84. 15. 54	82. 49. 46	81. 23. 39
	11	79. 57. 33	78. 31. 28	77. 5. 23	75. 39. 20	74. 13. 16	72. 47. 13	71. 21. 10	69. 55. 8
	12	68. 29. 7	67. 3. 7	65. 37. 7	64. 11. 8	62. 45. 10	61. 19. 11	59. 53. 13	58. 27. 16
	13	57. 1. 20	55. 35. 25	54. 9. 32	52. 43. 42	51. 17. 54	49. 52. 9	48. 26. 28	47. 0. 50
	14	45. 35. 17							

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	14	74. 54. 0	73. 23. 30	71. 52. 50	70. 21. 59	68. 50. 57	67. 19. 43	65. 48. 18	64. 16. 41
	15	62. 44. 51	61. 12. 49	59. 40. 32	58. 8. 2	56. 35. 17	55. 2. 16	53. 29. 0	51. 55. 28
	16	50. 21. 40	48. 47. 35	47. 13. 14	45. 38. 35	44. 3. 39	42. 28. 24	40. 52. 51	39. 17. 0
	17	37. 40. 50							
The Sun.	14	120. 34. 48	119. 11. 18	117. 47. 37	116. 23. 45	114. 59. 41	113. 35. 25	112. 10. 57	110. 46. 17
	15	109. 21. 24	107. 56. 17	106. 30. 57	105. 5. 21	103. 39. 30	102. 13. 23	100. 46. 59	99. 20. 19
	16	97. 53. 21	96. 26. 7	94. 58. 35	93. 30. 43	92. 2. 32	90. 34. 1	89. 5. 10	87. 35. 58
	17	86. 6. 25	84. 36. 32	83. 6. 15	81. 35. 37	80. 4. 36	78. 33. 11	77. 1. 22	75. 29. 10
	18	73. 56. 33	72. 23. 33	70. 50. 8	69. 16. 18	67. 42. 3	66. 7. 21	64. 32. 14	62. 56. 41
	19	61. 20. 43	59. 44. 19	58. 7. 29	56. 30. 13	54. 52. 32	53. 14. 24	51. 35. 51	49. 56. 53
	20	48. 17. 30	46. 37. 42	44. 57. 30	43. 16. 55	41. 35. 57	39. 54. 36		
Spica ♍.	25	56. 42. 6	54. 50. 3	52. 58. 16	51. 6. 48	49. 15. 40	47. 24. 53	45. 34. 27	43. 44. 25
	26	41. 54. 50	40. 5. 41	38. 17. 0	36. 28. 50	34. 41. 14	32. 54. 13	31. 7. 48	29. 22. 1
	27	27. 36. 55							
Antares.	27	73. 10. 3	71. 22. 52	69. 36. 8	67. 49. 50	66. 3. 58	64. 18. 32	62. 33. 33	60. 49. 0
	28	59. 4. 54	57. 21. 15	55. 38. 2	53. 55. 17	52. 12. 59	50. 31. 10	48. 49. 49	47. 8. 55
	29	45. 28. 29	43. 48. 31	42. 9. 1	40. 29. 59	38. 51. 26	37. 13. 22	35. 35. 47	33. 58. 42
	30	32. 22. 6							
α Aquilæ.	30	82. 20. 27	80. 58. 1	79. 36. 3	78. 14. 33	76. 53. 32	75. 32. 57	74. 12. 53	72. 53. 19
	31	71. 34. 15	70. 15. 42	68. 57. 43	67. 40. 18	66. 23. 29	65. 7. 14	63. 51. 40	62. 36. 44
	A. 1	61. 22. 28							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	92. 39. 40	94. 13. 5	95. 46. 10	97. 18. 56	98. 51. 22	100. 23. 29	101. 55. 17	103. 26. 47
	2	104. 57. 58	106. 28. 51	107. 59. 27	109. 29. 45	110. 59. 47	112. 29. 32	113. 59. 1	115. 28. 13
	3	116. 57. 10	118. 25. 51	119. 54. 18	121. 22. 29	122. 50. 26			
Regulus.	1	45. 48. 50	47. 28. 51	49. 8. 35	50. 48. 2	52. 27. 11	54. 6. 2	55. 44. 36	57. 22. 53
	2	59. 0. 53	60. 38. 35	62. 15. 59	63. 53. 6	65. 29. 58	67. 6. 34	68. 42. 55	70. 19. 0
	3	71. 54. 50	73. 30. 25	75. 5. 46	76. 40. 51	78. 15. 42			
Spica ♍.	3	- - -	- - -	- - -	- - -	24. 48. 48	26. 20. 17	27. 51. 51	29. 23. 28
	4	30. 55. 7	32. 26. 49	33. 58. 31	35. 30. 12	37. 1. 51	38. 33. 24	40. 4. 53	41. 36. 18
	5	43. 7. 39	44. 38. 53	46. 10. 2	47. 41. 5	49. 12. 2	50. 42. 53	52. 13. 37	53. 44. 16
	6	55. 14. 48	56. 45. 14	58. 15. 33	59. 45. 47	61. 15. 56	62. 45. 59	64. 15. 55	65. 45. 46
	7	67. 15. 32							
Antares.	7	21. 41. 28	23. 8. 31	24. 35. 47	26. 3. 14	27. 30. 52	28. 58. 39	30. 26. 32	31. 54. 31
	8	33. 22. 36	34. 50. 43	36. 18. 50	37. 46. 58	39. 15. 9	40. 43. 18	42. 11. 28	43. 39. 38
	9	45. 7. 48	46. 35. 59	48. 4. 10	49. 32. 20	51. 0. 30	52. 28. 38	53. 56. 46	55. 24. 53
	10	56. 53. 1	58. 21. 8	59. 49. 16	61. 17. 24	62. 45. 32	64. 13. 41	65. 41. 49	67. 9. 59
	11	68. 38. 10	70. 6. 22	71. 34. 35	73. 2. 50	74. 31. 7	75. 59. 27	77. 27. 49	78. 56. 15
	12	80. 24. 43	81. 53. 15	83. 21. 50	84. 50. 29	86. 19. 12	87. 48. 0	89. 16. 53	90. 45. 51
	13	92. 14. 55	93. 44. 6	95. 13. 24	96. 42. 48	98. 12. 20	99. 41. 59	101. 11. 47	102. 41. 44
	14	104. 11. 49	105. 42. 2	107. 12. 27	108. 43. 1	110. 13. 45			

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
	14	- - -	- - -	- - -	- - -	66. 6. 36	67. 21. 1	68. 35. 55	69. 51. 18
α Aquilæ.	15	71. 7. 9	72. 23. 27	73. 40. 12	74. 57. 24	76. 14. 59	77. 32. 58	78. 51. 23	80. 10. 11
	16	81. 29. 24	82. 48. 57	84. 8. 50	85. 29. 3	86. 49. 36			
	16	- - -	- - -	- - -	- - -	52. 48. 56	54. 18. 44	55. 49. 5	57. 19. 57
Fomalhaut.	17	58. 51. 21	60. 23. 16	61. 55. 42	63. 28. 38	65. 2. 5	66. 36. 1	68. 10. 27	69. 45. 22
	18	71. 20. 46	72. 56. 39	74. 33. 0	76. 9. 49	77. 47. 6			
	18	- - -	- - -	- - -	- - -	61. 27. 36	62. 57. 35	64. 28. 17	65. 59. 40
α Pegasi.	19	67. 31. 44	69. 4. 27	70. 37. 48	72. 11. 47	73. 46. 21	75. 21. 29	76. 57. 11	78. 33. 26
	20	80. 10. 11							
	20	36. 33. 44	38. 12. 27	39. 52. 8	41. 32. 45	43. 14. 13	44. 56. 31	46. 39. 36	48. 23. 25
α Arietis.	21	50. 7. 54	51. 53. 2	53. 38. 44	55. 25. 0	57. 11. 49	58. 59. 8	60. 46. 55	62. 35. 7
	22	64. 23. 42							
	26	- - -	- - -	39. 32. 57	41. 15. 28	42. 57. 39	44. 39. 29	46. 20. 56	48. 2. 1
	27	49. 42. 44	51. 23. 3	53. 2. 57	54. 42. 28	56. 21. 34	58. 0. 14	59. 38. 30	61. 16. 21
	28	62. 53. 46	64. 30. 46	66. 7. 21	67. 43. 31	69. 19. 16	70. 54. 35	72. 29. 29	74. 3. 58
The Sun.	29	75. 38. 2	77. 11. 42	78. 44. 57	80. 17. 48	81. 50. 16	83. 22. 20	84. 54. 1	86. 25. 19
	30	87. 56. 15	89. 26. 49	90. 57. 2	92. 26. 54	93. 56. 25	95. 25. 35	96. 54. 25	98. 22. 56
	31	99. 51. 8	101. 19. 1	102. 46. 37	104. 13. 55	105. 40. 55	107. 7. 39	108. 34. 6	110. 0. 17
	A. 1	111. 26. 13							
	30	15. 41. 17	17. 11. 16	18. 41. 54	20. 13. 7	21. 44. 47	23. 16. 51	24. 49. 11	26. 21. 45
Spica ♍.	31	27. 54. 23	29. 26. 55	30. 59. 25	32. 31. 51	34. 4. 16	35. 36. 34	37. 8. 42	38. 40. 40
	A. 1	40. 12. 27							

CONFIGURATIONS of the SATELLITES of JUPITER

at II o'Clock *in the Morning.*

1	2●		·4																												
2	1.○																														
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10	2.○3●																														
11																															
12																															
13																															
14																															
15																															
16																															
17																															
18																															
19																															
20	4.○																														
21																															
22																															
23																															
24																															
25	1.○																														
26	2.○																														
27																															
28	3.○																														
29																															
30																															
31																															

Days of the Week.	Days of the Month.	*Sundays, Holidays, Terms, &c.*
Tu.	1	Lammas-Day.
W.	2	
Th.	3	
F.	4	
Sa.	5	——[of our Lord.
Sun.	6	*8th Sun. aft. Trin.* Transf.
M.	7	Name of Jesus.
Tu.	8	
W.	9	
Th.	10	St. Lawrence.
F.	11	
Sa.	12	*Pr. of Wales born*, 1762.
Sun.	13	*9th Sun. after Trinity.*
M.	14	
Tu.	15	
W.	16	*D. of York.*
Th.	17	
F.	18	
Sa.	19	
Sun.	20	*10th Sunday after Trinity.*
M.	21	*D. of Clarence.*
Tu.	22	
W.	23	
Th.	24	*St. Bartholomew.*
F.	25	
Sa.	26	
Sun.	27	*11th Sunday after Trinity.*
M.	28	St. Augustine.
Tu.	29	Beheading of St. John [Baptist.
W.	30	
Th.	31	

Phases of the MOON.

	D. H. M.
○ Full Moon -----	7. 5. 31
☾ *Last Quarter* ----	15. 2. 53
● New Moon -----	21. 18. 33
☽ *First Quarter* ---	28. 16. 54

Other *Phenomena*.

D. H. M.

1. 1. 30 ☽ ☍ ♏
2. 12. 17 ☽ β Ophiuchi.
3. 16. 19 ☽ λ ♐
7. 8. 18¾ I. } of ♄ ♍ ✱ 7′ N. / 9′ N. of ☽'s C.
7. 9. 21 E.
8 - - ♃ Stationary.
9. 14. 27 ☽ 2 ad ↓ ♒
9. 14. 35 ☽ 3 ad ↓ ♒
10. 14. 54 I. } 33 ♓ ✱ 2′½ S. / 7′ S. of ☽'s C.
10. 16. 7½ E.
12. - - ♀ χ ☊ ✱ 2′ S.
16. 1. 9 ☽ ☌ ♉
16. - - ♀ σ ☊, ✱ 23′ N.
16. 14. 25¾ I. } ♂ ♉, ✱ 6′½ N. / 0′¼ S. of ☽'s C
16. 15. 25⅓ E.
17. 10. 0 ☽ 132 ♉
18. 6. 45 ☽ ☌ ♊
19. 5. 8 ☽ ☍ ♊
22. 5. 45 ☉ enters ♍
23. - - ♀ β ♍, ✱ 28′ S.
26. 1. 2 ☽ ☍ ♍
27. - - ☿ β ♍, ✱ 31′ N.
27. 14. 18 ☽ 4 ad ζ ♎
28. 4. 49 I. } β ♏, ✱ 12′ N. / 14′½ N. of ☽'C.
28. 5. 27½ E.
28. 8. 25 ☽ ☍ ♏
29. - - ♀ η ♍, ✱ 24′ N.
29. 18. 46 ☽ β Ophiuchi.
30. 22. 39 ☽ λ ♐

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. North.	Equation of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Tu.	1	4. 9. 35. 32	8. 48. 9, 1	17. 52. 11	5. 53, 0	4, 1
W.	2	4. 10. 32. 59	8. 52. 1, 5	17. 36. 43	5. 48, 9	4, 8
Th.	3	4. 11. 30. 27	8. 55. 53, 3	17. 20. 59	5. 44, 1	5, 4
F.	4	4. 12. 27. 55	8. 59. 44, 4	17. 4. 57	5. 38, 7	6, 0
Sa.	5	4. 13. 25. 24	9. 3. 34, 9	16. 48. 39	5. 32, 7	6, 7
Sun.	6	4. 14. 22. 55	9. 7. 24, 8	16. 32. 4	5. 26, 0	7, 2
M.	7	4. 15. 20. 26	9. 11. 14, 1	16. 15. 13	5. 18, 8	7, 8
Tu.	8	4. 16. 17. 58	9. 15. 2, 9	15. 58. 7	5. 11, 0	8, 4
W.	9	4. 17. 15. 31	9. 18. 51, 0	15. 40. 45	5. 2, 6	8, 9
Th.	10	4. 18. 13. 6	9. 22. 38, 6	15. 23. 9	4. 53, 7	9, 5
F.	11	4. 19. 10. 43	9. 26. 25, 7	15. 5. 17	4. 44, 2	10, 0
Sa.	12	4. 20. 8. 20	9. 30. 12, 2	14. 47. 11	4. 34, 2	10, 6
Sun.	13	4. 21. 5. 59	9. 33. 58, 1	14. 28. 51	4. 23, 6	11, 0
M.	14	4. 22. 3. 40	9. 37. 43, 6	14. 10. 17	4. 12, 6	11, 6
Tu.	15	4. 23. 1. 23	9. 41. 28, 5	13. 51. 29	4. 1, 0	12, 1
W.	16	4. 23. 59. 7	9. 45. 13, 0	13. 32. 27	3. 48, 9	12, 6
Th.	17	4. 24. 56. 53	9. 48. 56, 9	13. 13. 13	3. 36, 3	13, 0
F.	18	4. 25. 54. 41	9. 52. 40, 4	12. 53. 46	3. 23, 3	13, 5
Sa.	19	4. 26. 52. 30	9. 56. 23, 4	12. 34. 6	3. 9, 8	14, 0
Sun.	20	4. 27. 50. 21	10. 0. 5, 9	12. 14. 14	2. 55, 8	14, 5
M.	21	4. 28. 48. 14	10. 3. 48, 0	11. 54. 11	2. 41, 3	14, 9
Tu.	22	4. 29. 46. 8	10. 7. 29, 6	11. 33. 56	2. 26, 4	15, 3
W.	23	5. 0. 44. 4	10. 11. 10, 8	11. 13. 30	2. 11, 1	15, 7
Th.	24	5. 1. 42. 2	10. 14. 51, 6	10. 52. 53	1. 55, 4	16, 2
F.	25	5. 2. 40. 0	10. 18. 31, 9	10. 32. 7	1. 39, 2	16, 6
Sa.	26	5. 3. 38. 0	10. 22. 11, 9	10. 11. 10	1. 22, 6	17, 0
Sun.	27	5. 4. 36. 2	10. 25. 51, 4	9. 50. 3	1. 5, 6	17, 3
M.	28	5. 5. 34. 4	10. 29. 30, 5	9. 28. 48	0. 48, 3	17, 7
Tu.	29	5. 6. 32. 8	10. 33. 9, 3	9. 7. 23	0. 30, 6	18, 1
W.	30	5. 7. 30. 13	10. 36. 47, 7	8. 45. 50	0. 12, 5	18, 5
Th.	31	5. 8. 28. 20	10. 40. 25, 8	8. 24. 8	*Sub.* 6, 0	

Days	Time of ☉'s Semidiam. passs Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 6, 5	15. 49, 0	2. 23, 6	0. 006233	2. 19. 58
7	1. 6, 0	15. 49, 9	2. 23, 9	0. 005815	2. 19. 39
13	1. 5, 5	15. 51, 0	2. 24, 3	0. 005360	2. 19. 20
19	1. 5, 0	15. 52, 2	2. 24, 6	0. 004856	2. 19. 1
25	1. 4, 7	15. 53, 4	2. 25, 0	0. 004281	2. 18. 42

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Immersions.		*Immersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	10. 40. 31	* 1	11. 53. 0	6	23. 48. 31 Im.
3	5. 9. 4	5	1. 12. 8	7	2. 13. 34 E.
4	23. 37. 40	* 8	14. 31. 20	14	3. 50. 37 Im.
6	18. 6. 16	12	3. 50. 42	14	6. 14. 27 E.
* 8	12. 35. 0	15	17. 10. 8	21	7. 53. 12 Im.
10	7. 3. 41	19	6. 29. 43	*21	10. 15. 50 E.
12	1. 32. 23	22	19. 49. 7	*28	11. 56. 12 Im.
13	20. 1. 11	26	9. 8. 55	*28	14. 17. 36 E.
*15	14. 29. 56	29	22. 28. 37		
17	8. 58. 48				
19	3. 27. 39				
20	21. 56. 32				
22	16. 25. 26				
*24	10. 54. 25				
26	5. 23. 18				
27	23. 52. 21				
29	18. 21. 21				
*31	12. 50. 26				

IV. Satellite.	
13	5. 31. 39 Im.
13	7. 9. 43 E.
29	23. 59. 29 Im.
30	1. 19. 41 E.

THE PLANETS.

Days	Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
	☿		*MERCURY.*		Sup. ♂ 4d. 22¼h.	
1	3. 21. 8	6. 22 N	4. 5. 14	1. 32 N	20. 28 N	23. 49
4	4. 8. 22	6. 56	4. 11. 28	1. 43	19. 0	0. 2
7	4. 24. 14	6. 55	4. 17. 34	1. 45	17. 15	0. 11
10	5. 8. 40	6. 28	4. 23. 33	1. 43	15. 19	0. 23
13	5. 21. 45	5. 41	4. 29. 18	1. 36	13. 14	0. 33
16	6. 3. 41	4. 43	5. 4. 51	1. 24	11. 3	0. 44
19	6. 14. 37	3. 39	5. 10. 12	1. 8	8. 48	0. 51
22	6. 24. 45	2. 32	5. 15. 20	0. 50	6. 33	1. 0
25	7. 4. 16	1. 25	5. 20. 16	0. 29	4. 19	1. 6
28	7. 13. 18	0. 20 N	5. 25. 0	0. 7 N	2. 6 N	1. 12
31	7. 21. 58	0. 44 S	5. 29. 33	0. 17 S	0. 4 S	1. 18
	♀		*VENUS.*			
1	5. 22. 35	3. 21 N	4. 27. 14	1. 30 N	13. 51 N	1. 12
7	6. 2. 18	3. 14	5. 4. 36	1. 28	11. 12	1. 17
13	6. 12. 0	3. 1	5. 11. 57	1. 23	8. 22	1. 21
19	6. 21. 40	2. 43	5. 19. 18	1. 16	5. 24	1. 26
25	7. 1. 19	2. 20	5. 26. 39	1. 7	2. 21	1. 31
	♂		*MARS.*		♂ 9d 10¼h.	
1	4. 13. 58	1. 51 N	4. 12. 18	1. 9 N	18. 14 N	0. 12
7	4. 16. 36	1. 51	4. 16. 8	1. 9	17. 7	0. 5
13	4. 19. 15	1. 51	4. 19. 57	1. 9	15. 57	23. 56
19	4. 21. 53	1. 51	4. 23. 45	1. 9	14. 42	23. 48
25	4. 24. 30	1. 50	4. 27. 35	1. 9	13. 24	23. 41
	♃		*JUPITER.*			
1	0. 8. 42	1. 19 S	0. 19. 51	1. 27 S	6. 26 N	16. 25
11	0. 9. 38	1. 19	0. 19. 55	1. 30	6. 25	15. 47
21	0. 10. 33	1. 19	0. 19. 40	1. 32	6. 17	15. 9
	♄		*SATURN.*			
1	3. 2. 55	0. 49 S	3. 6. 27	0. 45 S	22. 34 N	21. 37
11	3. 3. 18	0. 48	3. 7. 35	0. 44	22. 31	21. 4
21	3. 3. 40	0. 47	3. 8. 37	0. 44	22. 27	20. 31
	♅		*GEORGIAN.*			
1	5. 12. 54	0. 46 N	5. 11. 14	0. 44 N	8. 3 N	2. 3
11	5. 13. 2	0. 46	5. 11. 49	0. 44	7. 49	1. 27
21	5. 13. 10	0. 46	5. 12. 25	0. 44	7. 35	0. 52

Days of the Week.	Days of the Month.	THE MOON's Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Tu.	1	8. 1. 2. 27	8. 7. 12. 14	1. 49. 16 N	1. 17. 28 N
W.	2	8. 13. 18. 29	8. 19. 21. 41	0. 45. 7 N	0. 12. 32 N
Th.	3	8. 25. 22. 26	9. 1. 21. 11	0. 19. 57 S	0. 51. 59 S
F.	4	9. 7. 18. 21	9. 13. 14. 25	1. 23. 16	1. 53. 30
Sa.	5	9. 19. 9. 43	9. 25. 4. 36	2. 22. 23	2. 49. 40
Sun.	6	10. 0. 59. 24	10. 6. 54. 21	3. 15. 4	3. 38. 20
M.	7	10. 12. 49. 44	10. 18. 45. 42	3. 59. 14	4. 17. 33
Tu.	8	10. 24. 42. 33	11. 0. 40. 25	4. 33. 5	4. 45. 39
W.	9	11. 6. 39. 29	11. 12. 39. 58	4. 55. 8	5. 1. 22
Th.	10	11. 18. 42. 5	11. 24. 46. 1	5. 4. 16	5. 3. 46
F.	11	0. 0. 52. 2	0. 7. 0. 23	4. 59. 48	4. 52. 21
Sa.	12	0. 13. 11. 23	0. 19. 25. 20	4. 41. 26	4. 27. 6
Sun.	13	0. 25. 42. 38	1. 2. 3. 38	4. 9. 25	3. 48. 28
M.	14	1. 8. 28. 44	1. 14. 58. 22	3. 24. 25	2. 57. 26
Tu.	15	1. 21. 32. 56	1. 28. 12. 48	2. 27. 46	1. 55. 42
W.	16	2. 4. 58. 21	2. 11. 49. 51	1. 21. 33	0. 45. 44 S
Th.	17	2. 18. 47. 30	2. 25. 51. 25	0. 8. 44 S	0. 28. 57 N
F.	18	3. 3. 1. 34	3. 10. 17. 42	1. 6. 43 N	1. 43. 52
Sa.	19	3. 17. 39. 25	3. 25. 6. 9	2. 19. 42	2. 53. 31
Sun.	20	4. 2. 37. 2	4. 10. 11. 7	3. 24. 35	3. 52. 16
M.	21	4. 17. 47. 10	4. 25. 23. 56	4. 15. 56	4. 35. 3
Tu.	22	5. 3. 0. 0	5. 10. 34. 1	4. 49. 16	4. 58. 19
W.	23	5. 18. 4. 40	5. 25. 30. 48	5. 2. 7	5. 0. 46
Th.	24	6. 2. 51. 21	6. 10. 5. 29	4. 54. 27	4. 43. 27
F.	25	6. 17. 12. 41	6. 24. 12. 31	4. 28. 11	4. 9. 7
Sa.	26	7. 1. 4. 52	7. 7. 49. 48	3. 46. 44	3. 21. 32
Sun.	27	7. 14. 27. 33	7. 20. 58. 26	2. 54. 0	2. 24. 39
M.	28	7. 27. 22. 58	8. 3. 41. 40	1. 53. 55	1. 22. 13
Tu.	29	8. 9. 55. 10	8. 16. 4. 8	0. 49. 57 N	0. 17. 30 N
W.	30	8. 22. 9. 8	8. 28. 10. 55	0. 14. 48 S	0. 46. 38 S
Th.	31	9. 4. 10. 4	9. 10. 7. 12	1. 17. 41	1. 47. 41

Days of the Week.	Days of the Month.	THE MOON'S Age.	Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Tu.	1	10	7. 23	239. 18	245. 37	18. 36 S	20. 16 S
W.	2	11	8. 12	252. 0	258. 27	21. 41	22. 50
Th.	3	12	9. 2	264. 57	271. 29	23. 43	24. 20
F.	4	13	9. 52	278. 2	284. 36	24. 39	24. 41
Sa.	5	14	10. 43	291. 7	297. 35	24. 27	23. 55
Sun.	6	15	11. 31	303. 59	310. 18	23. 8	22. 5
M.	7	16	12. 18	316. 31	322. 37	20. 48	19. 18
Tu.	8	17	13. 3	328. 36	334. 29	17. 35	15. 42
W.	9	18	13. 46	340. 17	345. 59	13. 38	11. 27
Th.	10	19	14. 29	351. 37	357. 13	9. 8	6. 44
F.	11	20	15. 11	2. 48	8. 22	4. 14 S	1. 41 S
Sa.	12	21	15. 53	13. 58	19. 37	0. 54 N	3. 29 N
Sun.	13	22	16. 37	25. 21	31. 12	6. 4	8. 38
M.	14	23	17. 25	37. 13	43. 24	11. 7	13. 31
Tu.	15	24	18. 16	49. 47	56. 25	15. 47	17. 54
W.	16	25	19. 11	63. 17	70. 25	19. 49	21. 29
Th.	17	26	20. 11	77. 49	85. 28	22. 51	23. 53
F.	18	27	21. 14	93. 20	101. 21	24. 33	24. 48
Sa.	19	28	22. 18	109. 28	117. 38	24. 37	23. 59
Sun.	20	29	23. 21	125. 45	133. 46	22. 55	21. 26
M.	21	1	☌	141. 37	149. 17	19. 34	17. 23
Tu.	22	2	0. 20	156. 45	164. 0	14. 54	12. 13
W.	23	3	1. 15	171. 2	177. 53	9. 21	6. 23
Th.	24	4	2. 8	184. 35	191. 8	3. 22 N	0. 21 N
F.	25	5	2. 58	197. 35	203. 57	2. 38 S	5. 32 S
Sa.	26	6	3. 46	210. 16	216. 34	8. 19	10. 57
Sun.	27	7	4. 35	222. 52	229. 12	13. 25	15. 42
M.	28	8	5. 23	235. 33	241. 57	17. 45	19. 34
Tu.	29	9	6. 13	248. 24	254. 54	21. 8	22. 27
W.	30	10	7. 3	261. 26	268. 0	23. 29	24. 14
Th.	31	11	7. 54	274. 35	281. 10	24. 42	24. 52

Days of the Week.	Days of the Month.	The Moon's Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
Tu.	1	15. 11	15. 6	55. 42	55. 24	5094	5118
W.	2	15. 1	14. 58	55. 8	54. 54	5138	5157
Th.	3	14. 54	14. 52	54. 42	54. 32	5173	5186
F.	4	14. 49	14. 47	54. 23	54. 16	5198	5207
Sa.	5	14. 46	14. 45	54. 11	54. 8	5214	5218
Sun.	6	14. 45	14. 44	54. 6	54. 5	5221	5222
M.	7	14. 45	14. 45	54. 6	54. 8	5221	5218
Tu.	8	14. 46	14. 47	54. 11	54. 16	5214	5207
W.	9	14. 49	14. 51	54. 23	54. 30	5198	5189
Th.	10	14. 53	14. 56	54. 38	54. 49	5178	5163
F.	11	15. 0	15. 3	55. 1	55. 15	5148	5129
Sa.	12	15. 7	15. 12	55. 30	55. 47	5110	5087
Sun.	13	15. 17	15. 23	56. 6	56. 26	5063	5037
M.	14	15. 29	15. 35	56. 48	57. 10	5009	4981
Tu.	15	15. 41	15. 48	57. 34	57. 59	4951	4919
W.	16	15. 55	16. 2	58. 25	58. 51	4887	4855
Th.	17	16. 9	16. 16	59. 16	59. 41	4824	4794
F.	18	16. 22	16. 28	60. 4	60. 25	4766	4741
Sa.	19	16. 33	16. 37	60. 45	61. 0	4717	4699
Sun.	20	16. 40	16. 42	61. 11	61. 19	4686	4677
M.	21	16. 43	16. 43	61. 22	61. 20	4673	4676
Tu.	22	16. 41	16. 38	61. 13	61. 2	4684	4697
W.	23	16. 34	16. 29	60. 47	60. 28	4715	4737
Th.	24	16. 23	16. 16	60. 6	59. 41	4764	4794
F.	25	16. 8	16. 1	59. 14	58. 45	4827	4863
Sa.	26	15. 53	15. 45	58. 16	57. 48	4898	4933
Sun.	27	15. 37	15. 30	57. 20	56. 53	4968	5003
M.	28	15. 23	15. 17	56. 29	56. 5	5033	5064
Tu.	29	15. 11	15. 6	55. 43	55. 23	5093	5119
W.	30	15. 1	14. 57	55. 6	54. 51	5141	5161
Th.	31	14. 54	14. 51	54. 39	54. 29	5177	5190

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Fomalhaut.	1	90. 37. 31	89. 8. 9	87. 39. 0	86. 10. 5	84. 41. 24	83. 12. 56	81. 44. 41	80. 16. 39
	2	78. 48. 51	77. 21. 16	75. 53. 53	74. 26. 44	72. 59. 47	71. 33. 2	70. 6. 30	68. 40. 11
	3	67. 14. 4	65. 48. 10	64. 22. 30	62. 57. 3	61. 31. 49			
α Pegasi.	3	- - -	- - -	- - -	- - -	80. 13. 12	78. 51. 51	77. 30. 40	76. 9. 39
	4	74. 48. 49	73. 28. 9	72. 7. 42	70. 47. 28	69. 27. 26	68. 7. 37	66. 48. 2	65. 28. 43
	5	64. 9. 39	62. 50. 51	61. 32. 20	60. 14. 9	58. 56. 17	57. 38. 46	56. 21. 36	55. 4. 49
	6	53. 48. 26							
α Arietis.	6	94. 20. 11	92. 53. 56	91. 27. 41	90. 1. 25	88. 35. 9	87. 8. 53	85. 42. 36	84. 16. 19
	7	82. 50. 2	81. 23. 45	79. 57. 27	78. 31. 9	77. 4. 51	75. 38. 32	74. 12. 13	72. 45. 54
	8	71. 19. 35	69. 53. 16	68. 26. 56	67. 0. 38	65. 34. 19	64. 8. 0	62. 41. 43	61. 15. 26
	9	59. 49. 11	58. 22. 57	56. 56. 45	55. 30. 35	54. 4. 27			
Aldebaran.	9	- - -	- - -	- - -	- - -	83. 51. 15	82. 21. 28	80. 51. 36	79. 21. 38
	10	77. 51. 33	76. 21. 22	74. 51. 4	73. 20. 38	71. 50. 6	70. 19. 26	68. 48. 38	67. 17. 42
	11	65. 46. 38	64. 15. 25	62. 44. 3	61. 12. 32	59. 40. 52	58. 9. 2	56. 37. 1	55. 4. 50
	12	53. 32. 28	51. 59. 56	50. 27. 12	48. 54. 17	47. 21. 11	45. 47. 52	44. 14. 21	42. 40. 37
	13	41. 6. 41	39. 32. 32	37. 58. 11	36. 23. 37	34. 48. 51	33. 13. 51	31. 38. 39	30. 3. 17
	14	28. 27. 43	26. 51. 55	25. 15. 58	23. 39. 57	22. 3. 50	20. 27. 43	18. 51. 36	17. 15. 33
	15	15. 39. 34							

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	12	- - -	- - -	- - -	- - -	121. 5. 33	119. 39. 18	118. 12. 48	116. 46. 3
	13	115. 19. 4	113. 51. 50	112. 24. 19	110. 56. 33	109. 28. 30	108. 0. 11	106. 31. 33	105. 2. 39
	14	103. 33. 27	102. 3. 57	100. 34. 8	99. 4. 0	97. 33. 33	96. 2. 46	94. 31. 39	93. 0. 11
	15	91. 28. 23	89. 56. 14	88. 23. 43	86. 50. 51	85. 17. 37	83. 44. 0	82. 10. 2	80. 35. 40
	16	79. 0. 57	77. 25. 51	75. 50. 22	74. 14. 31	72. 38. 16	71. 1. 37	69. 24. 35	67. 47. 11
	17	66. 9. 23	64. 31. 13	62. 52. 40	61. 13. 45	59. 34. 27	57. 54. 46	56. 14. 44	54. 34. 20
	18	52. 53. 36	51. 12. 31	49. 31. 8	47. 49. 26	46. 7. 25	44. 25. 6	42. 42. 32	40. 59. 41
	19	39. 16. 34							
Antares.	23	79. 20. 24	77. 29. 23	75. 38. 41	73. 48. 19	71. 58. 17	70. 8. 36	68. 19. 17	66. 30. 21
	24	64. 41. 48	62. 53. 40	61. 5. 57	59. 18. 40	57. 31. 48	55. 45. 22	53. 59. 24	52. 13. 54
	25	50. 28. 51	48. 44. 18	47. 0. 14	45. 16. 40	43. 33. 35	41. 51. 0	40. 8. 57	38. 27. 25
	26	36. 46. 25	35. 5. 58	33. 26. 4	31. 46. 44	30. 7. 58			
α Aquilæ.	26	- - -	- - -	- - -	- - -	80. 34. 55	79. 10. 57	77. 47. 30	76. 24. 34
	27	75. 2. 13	73. 40. 25	72. 19. 14	70. 58. 39	69. 38. 41	68. 19. 21	67. 0. 42	65. 42. 46
	28	64. 25. 30	63. 8. 59	61. 53. 13	60. 38. 16	59. 24. 6	58. 10. 48	56. 58. 21	55. 46. 49
	29	54. 36. 12							
Fomalhaut.	29	81. 59. 45	80. 30. 35	79. 1. 42	77. 33. 7	76. 4. 51	74. 36. 52	73. 9. 9	71. 41. 44
	30	70. 14. 35	68. 47. 41	67. 21. 3	65. 54. 42	64. 28. 37	63. 2. 49	61. 37. 17	60. 12. 2
	31	58. 47. 4							
α Pegasi.	31	77. 43. 27	76. 22. 12	75. 1. 11	73. 40. 23	72. 19. 49	70. 59. 29	69. 39. 23	68. 19. 32
	S. 1	66. 59. 55							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	111. 26. 13	112. 51. 55	114. 17. 21	115. 42. 33	117. 7. 32	118. 32. 17	119. 56. 50	121. 21. 10
	2	122. 45. 18							
Spica ♍.	1	40. 12. 27	41. 44. 8	43. 15. 40	44. 47. 3	46. 18. 17	47. 49. 22	49. 20. 18	50. 51. 5
	2	52. 21. 44	53. 52. 13	55. 22. 35	56. 52. 48	58. 22. 53	59. 52. 50	61. 22. 41	62. 52. 25
	3	64. 22. 2							
Antares.	3	18. 53. 36	20. 19. 42	21. 46. 6	23. 12. 48	24. 39. 44	26. 6. 54	27. 34. 14	29. 1. 44
	4	30. 29. 23	31. 57. 3	33. 24. 47	34. 52. 35	36. 20. 25	37. 48. 16	39. 16. 9	40. 44. 4
	5	42. 12. 0	43. 39. 57	45. 7. 55	46. 35. 54	48. 3. 54	49. 31. 55	50. 59. 57	52. 28. 1
	6	53. 56. 5	55. 24. 10	56. 52. 17	58. 20. 25	59. 48. 34	61. 16. 45	62. 44. 58	64. 13. 12
	7	65. 41. 28	67. 9. 46	68. 38. 6	70. 6. 28	71. 34. 53	73. 3. 21	74. 31. 52	76. 0. 26
	8	77. 29. 3	78. 57. 43	80. 26. 27	81. 55. 14	83. 24. 5	84. 53. 0	86. 22. 0	87. 51. 4
	9	89. 20. 12	90. 49. 25	92. 18. 42	93. 48. 5	95. 17. 33	96. 47. 7	98. 16. 47	99. 46. 33
	10	101. 16. 25	102. 46. 24	104. 16. 29	105. 46. 41	107. 17. 0			
α Aquilæ.	10	- - -	- - -	- - -	- - -	63. 37. 9	64. 50. 17	66. 3. 56	67. 18. 4
	11	68. 32. 38	69. 47. 40	71. 3. 6	72. 18. 57	73. 35. 12	74. 51. 48	76. 8. 45	77. 26. 2
	12	78. 43. 40	80. 1. 37	81. 19. 51	82. 38. 23	83. 57. 12	85. 16. 17	86. 35. 37	87. 55. 12
	13	89. 15. 1							
Fomalhaut.	13	55. 41. 5	57. 10. 19	58. 39. 58	60. 10. 2	61. 40. 32	63. 11. 26	64. 42. 44	66. 14. 27
	14	67. 46. 34	69. 19. 4	70. 51. 58	72. 25. 15	73. 58. 55	75. 32. 58	77. 7. 23	78. 42. 12

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Fomalhaut.	15	80. 17. 23	81. 52. 57	83. 28. 53	85. 5. 12	86. 41. 54			
α Arietis.	15	- - -	- - -	- - -	- - -	26. 8. 39	27. 35. 14	29. 3. 27	30. 33. 10
	16	32. 4. 18	33. 36. 49	35. 10. 28	36. 45. 15	38. 21. 11	39. 57. 56	41. 35. 32	43. 14. 0
	17	44. 53. 16	46. 33. 16	48. 13. 57	49. 55. 16	51. 37. 10			
Aldebaran.	17	- - -	- - -	- - -	- - -	19. 47. 41	21. 32. 42	23. 18. 23	25. 4. 40
	18	26. 51. 33	28. 39. 0	30. 26. 56	32. 15. 23	34. 4. 17	35. 53. 36	37. 43. 18	39. 33. 23
	19	41. 23. 51	43. 14. 39	45. 5. 45	46. 57. 9	48. 48. 52	50. 40. 50	52. 33. 2	54. 25. 28
	20	56. 18. 7	58. 10. 57	60. 3. 57	61. 57. 7	63. 50. 25			
The Sun.	24	- - -	- - -	- - -	- - -	38. 9. 26	39. 48. 29	41. 27. 8	43. 5. 24
	25	44. 43. 17	46. 20. 46	47. 57. 51	49. 34. 32	51. 10. 48	52. 46. 38	54. 22. 3	55. 57. 3
	26	57. 31. 38	59. 5. 47	60. 39. 30	62. 12. 49	63. 45. 42	65. 18. 10	66. 50. 14	68. 21. 53
	27	69. 53. 8	71. 23. 58	72. 54. 25	74. 24. 29	75. 54. 9	77. 23. 27	78. 52. 23	80. 20. 57
	28	81. 49. 10	83. 17. 2	84. 44. 33	86. 11. 45	87. 38. 36	89. 5. 9	90. 31. 24	91. 57. 21
	29	93. 23. 1	94. 48. 24	96. 13. 31	97. 38. 22	99. 2. 57	100. 27. 17	101. 51. 23	103. 15. 16
	30	104. 38. 55	106. 2. 21	107. 25. 36	108. 48. 39	110. 11. 31	111. 34. 12	112. 56. 44	114. 19. 6
	31	115. 41. 18	117. 3. 22	118. 25. 18	119. 47. 6	121. 8. 47			
Spica ♍.	28	- - -	- - -	- - -	- - -	42. 48. 47	44. 21. 43	45. 54. 26	47. 26. 54
	29	48. 59. 8	50. 31. 8	52. 2. 55	53. 34. 29	55. 5. 50	56. 36. 57	58. 7. 53	59. 38. 36
	30	61. 9. 8	62. 39. 29	64. 9. 40	65. 39. 42	67. 9. 33	68. 39. 15	70. 8. 48	71. 38. 13
	31	73. 7. 30							
Antares.	31	27. 23. 18	28. 51. 8	30. 18. 59	31. 46. 52	33. 14. 42	34. 42. 36	36. 10. 31	37. 38. 27
	S. 1	39. 6. 23							

CONFIGURATIONS of the SATELLITES of JUPITER at XI o'Clock *at Night*.

| | | |

Days of the Week.	Days of the Month.	*Sundays, Holidays, Terms, &c.*
F.	1	Giles.
Sa.	2	London burnt 1666, O.S.
Sun.	3	*12th Sunday after Trinity.*
M.	4	
Tu.	5	
W.	6	
Th.	7	Enurchus.
F.	8	Nativity of B. V. Mary.
Sa.	9	
Sun.	10	*13th Sunday after Trinity.*
M.	11	
Tu.	12	
W.	13	
Th.	14	Holy Cross.
F.	15	
Sa.	16	
Sun.	17	*14th Sunday after Trinity.*
M.	18	[Lambert.
Tu.	19	
W.	20	
Th.	21	*St. Matthew.*
F.	22	*K. Geo. III. crowned* 1761.
Sa.	23	
Sun.	24	*15th Sunday after Trinity.*
M.	25	
Tu.	26	St. Cyprian.
W.	27	
Th.	28	
F.	29	*St. Michael. Prs. Royalbo.*
Sa.	30	St. Jerome.

Phases of the MOON.

	D. H. M.
○ Full Moon ----	5. 21. 7
☾ *Last Quarter* ---	13. 11. 50
● New Moon ----	20. 2. 51
☽ *First Quarter* ---	27. 9. 31

Other *Phenomena.*

D. H. M.	
3. 15. 31	☽ ε ♑
5. 20. 35	☽ 2 ad ↓ ♒
5. 20. 42	☽ 3 ad ↓ ♒
6. 20. 36	☽ 33 ♓
12. 7. 30	☽ ε ♉
12. 22. 25	☽ ι ♉
13. 17. 13	☽ 132 ♉
14. 14. 40	☽ ε ♊
15. 13. 49	☽ κ ♊
16. 12. 46	☽ γ ♋
16 - -	☿ α ♍, ✱ 31′ N.
17 - -	☿ ι ♍, ✱ 40′ S.
17. 21. 45	☽ η ♌
20 - -	♂ ♅ diff. Lat. 23′
22 2. 14	☉ enters ♎
22. 10. 57	☽ κ ♍
23. 23. 19	☽ 4 ad ζ ♎
24. 14. 18	☽ β ♏
24. 17. 1	☽ ν ♏
24 - -	♀ λ ♍, ✱ 41′ N.
26. 2. 38	☽ β Ophiuchi.
27. 6. 7	☽ λ ♐
27. 18. 12	☽ σ ♐
30. 22. 40	☽ ε ♑

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. North.	Equation of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
F.	1	5. 9. 26. 28	10. 44. 3, 6	8. 2. 18	0. 24, 7	
Sa.	2	5. 10. 24. 37	10. 47. 41, 0	7. 40. 21	0. 43, 8	19, 1
Sun.	3	5. 11. 22. 48	10. 51. 18, 2	7. 18. 16	1. 3, 2	19, 4
M.	4	5. 12. 21. 1	10. 54. 55, 1	6. 56. 4	1. 22, 8	19, 6
Tu.	5	5. 13. 19. 15	10. 58. 31, 7	6. 33. 45	1. 42, 6	19, 8
W.	6	5. 14. 17. 31	11. 2. 8, 2	6. 11. 20	2. 2, 6	20, 0
Th.	7	5. 15. 15. 48	11. 5. 44, 4	5. 48. 49	2. 22, 9	20, 3
F.	8	5. 16. 14. 7	11. 9. 20, 5	5. 26. 12	2. 43, 3	20, 4
Sa.	9	5. 17. 12. 29	11. 12. 56, 5	5. 3. 29	3. 3, 9	20, 6
Sun.	10	5. 18. 10. 53	11. 16. 32, 3	4. 40. 41	3. 24, 5	20, 6
M.	11	5. 19. 9. 19	11. 20. 8, 0	4. 17. 48	3. 45, 3	20, 8
Tu.	12	5. 20. 7. 47	11. 23. 43, 6	3. 54. 50	4. 6, 2	20, 9
W.	13	5. 21. 6. 17	11. 27. 19, 2	3. 31. 48	4. 27, 1	20, 9
Th.	14	5. 22. 4. 49	11. 30. 54, 7	3. 8. 42	4. 48, 1	21, 0
F.	15	5. 23. 3. 24	11. 34. 30, 2	2. 45. 33	5. 9, 1	21, 0
Sa.	16	5. 24. 2. 1	11. 38. 5, 8	2. 22. 20	5. 30, 1	21, 0
Sun.	17	5. 25. 0. 40	11. 41. 41, 3	1. 59. 4	5. 51, 0	20, 9
M.	18	5. 25. 59. 22	11. 45. 16, 8	1. 35. 45	6. 12, 0	21, 0
Tu.	19	5. 26. 58. 6	11. 48. 52, 5	1. 12. 24	6. 32, 9	20, 9
W.	20	5. 27. 56. 52	11. 52. 28, 1	0. 49. 2	6. 53, 7	20, 8
Th.	21	5. 28. 55. 39	11. 56. 3, 9	0. 25. 38	7. 14, 4	20, 7
F.	22	5. 29. 54. 29	11. 59. 39, 8	0. 2. 12	7. 35, 0	20, 6
				SOUTH.		20, 6
Sa.	23	6. 0. 53. 21	12. 3. 15, 7	0. 21. 14	7. 55, 6	
Sun.	24	6. 1. 52. 14	12. 6. 51, 8	0. 44. 41	8. 16, 0	20, 4
M.	25	6. 2. 51. 10	12. 10. 28, 1	1. 8. 8	8. 36, 2	20, 2
Tu.	26	6. 3. 50. 7	12. 14. 4, 5	1. 31. 34	8. 56, 3	20, 1
W.	27	6. 4. 49. 4	12. 17. 41, 1	1. 54. 59	9. 16, 2	19, 9
Th.	28	6. 5. 48. 4	12. 21. 17, 9	2. 18. 25	9. 35, 9	19, 7
F.	29	6. 6. 47. 7	12. 24. 55, 0	2. 41. 48	9. 55, 3	19, 4
Sa.	30	6. 7. 46. 12	12. 28. 32, 2	3. 5. 9	10. 14, 6	19, 3

Days	Time of ☉'s Semidiam. passg Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 4, 3	15. 55, 0	2. 25, 4	0. 003530	2. 18. 20
7	1. 4, 0	15. 56, 5	2. 25, 8	0. 002859	2. 18. 1
13	1. 4, 0	15. 58, 0	2. 26, 2	0. 002173	2. 17. 42
19	1. 4, 0	15. 59, 5	2. 26, 7	0. 001468	2. 17. 23
25	1. 4, 1	16. 1, 2	2. 27, 3	0. 000722	2. 17. 4

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Immersions.		*Immersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	7. 19. 27	* 2	11. 48. 36	* 4	15. 59. 39 Im.
4	1. 48. 31	6	1. 8. 30	4	18. 19. 55 E.
5	20. 17. 39	* 9	14. 28. 28	11	20. 3. 24 Im.
* 7	14. 46. 46	13	3. 48. 27	11	22. 22. 27 E.
* 9	9. 15. 59	16	17. 8. 25	19	0. 7. 24 Im.
11	3. 45. 4	20	6. 28. 32	19	2. 25. 15 E.
12	22. 14. 17	23	19. 48. 32	26	4. 11. 25 Im.
*14	16. 43. 27	*27	9. 8. 30	26	6. 28. 4 E.
*16	11. 12. 39	30	22. 28. 25		
18	5. 41. 49				
20	0. 11. 4				
21	18. 40. 14				
*23	13. 9. 28				
*25	7. 38. 39				
27	2. 7. 55				
28	20. 37. 5				
*30	15. 6. 15				

IV. Satellite.	
15	18. 32. 15 Im.
15	19. 28. 47 E.

Days	THE PLANETS					
	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
	☿ Gr. Elong. 16d. *MERCURY.*					
1	7.24.48	1. 5 S	6. 1. 1	0.25 S	0.47 S	1.19
4	8. 3.10	2. 5	6. 5.19	0.49	2.52	1.23
7	8.11.25	3. 1	6. 9.23	1.14	4.52	1.27
10	8.19.39	3.54	6.13.15	1.39	6.46	1.30
13	8.27.58	4.42	6.16.52	2. 4	8.32	1.32
16	9. 6.27	5.25	6.20.12	2.27	10.10	1.33
19	9.15.12	6. 2	6.23.11	2.49	11.38	1.33
22	9.24.19	6.31	6.25.46	3. 8	12.53	1.31
25	10. 3.55	6.51	6.27.47	3.23	13.51	1.28
28	10.14.10	7. 0	6.29. 9	3.33	14.30	1.22
30	10.21.24	6.57	6.29.35	3.35	14.41	1.16
	♀ *VENUS.*					
1	7.12.32	1.49 N	6. 5.13	0.53 N	1.16 S	1.36
7	7.22. 7	1.19	6.12.33	0.39	4.22	1.41
13	8. 1.41	0.46	6.19.52	0.24	7.25	1.47
19	8.11.13	0.13 N	6.27.10	0. 7 N	10.22	1.52
25	8.20.44	0.21 S	7. 4.27	0.11 S	13.12	1.57
	♂ *MARS.*					
1	4.27.34	1.49 N	5. 2. 2	1. 9 N	11.50 N	23.32
7	5. 0.11	1.49	5. 5.52	1. 8	10.26	23.25
13	5. 2.48	1.47	5. 9.40	1. 8	9. 0	23.18
19	5. 5.25	1.46	5.13.29	1. 7	7.32	23.11
25	5. 8. 3	1.44	5.17.19	1. 7	6. 2	23. 3
	♃ *JUPITER.*					
1	0.11.34	1.19 S	0.19. 1	1.35 S	5.59 N	14.26
11	0.12.29	1.19	0.18. 8	1.37	5.37	13.47
21	0.13.24	1.19	0.17. 0	1.38	5.11	13. 7
	♄ *SATURN.*					
1	3. 4. 5	0.46 S	3. 9.38	0.44 S	22.24 N	19.55
11	3. 4.28	0.45	3.10.26	0.44	22.20	19.22
21	3. 4.50	0.44	3.11. 4	0.43	22.17	18.49
	♅ *GEORGIAN.*					♂ 5d. 1h.
1	5.13.19	0.46 N	5.13. 6	0.44 N	7.19 N	0.15
11	5.13.27	0.46	5.13.44	0.44	7. 5	23.38
22	5.13.34	0.46	5.14.21	0.44	6.50	23. 4

Days of the Week.	Days of the Month	THE MOON's Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
F.	1	9. 16. 2. 53	9. 21. 57. 45	2. 16. 22 S	2. 43. 28 S
Sa.	2	9. 27. 52. 12	10. 3. 46. 42	3. 8. 44	3. 31. 55
Sun.	3	10. 9. 41. 41	10. 15. 37. 29	3. 52. 51	4. 11. 14
M.	4	10. 21. 34. 26	10. 27. 32. 45	4. 26. 56	4. 39. 45
Tu.	5	11. 3. 32. 39	11. 9. 34. 18	4. 49. 29	4. 56. 4
W.	6	11. 15. 37. 51	11. 21. 43. 24	4. 59. 19	4. 59. 10
Th.	7	11. 27. 51. 3	0. 4. 0. 52	4. 55. 35	4. 48. 30
F.	8	0. 10. 12. 57	0. 16. 27. 23	4. 37. 58	4. 24. 2
Sa.	9	0. 22. 44. 19	0. 29. 3. 50	4. 6. 47	3. 46. 23
Sun.	10	1. 5. 26. 11	1. 11. 51. 28	3. 22. 58	2. 56. 47
M.	11	1. 18. 20. 3	1. 24. 52. 4	2. 28. 3	1. 57. 6
Tu.	12	2. 1. 27. 53	2. 8. 7. 43	1. 24. 15	0. 49. 55 S
W.	13	2. 14. 51. 55	2. 21. 40. 41	0. 14. 29 S	0. 21. 34 N
Th.	14	2. 28. 34. 14	3. 5. 32. 44	0. 57. 44 N	1. 33. 26
F.	15	3. 12. 36. 14	3. 19. 44. 42	2. 8. 8	2. 41. 13
Sa.	16	3. 26. 57. 54	4. 4. 15. 29	3. 12. 2	3. 40. 2
Sun.	17	4. 11. 37. 0	4. 19. 1. 39	4. 4. 38	4. 25. 14
M.	18	4. 26. 28. 37	5. 3. 56. 55	4. 41. 28	4. 52. 54
Tu.	19	5. 11. 25. 23	5. 18. 52. 54	4. 59. 19	5. 0. 39
W.	20	5. 26. 18. 13	6. 3. 40. 15	4. 56. 54	4. 48. 10
Th.	21	6. 10. 57. 58	6. 18. 10. 22	4. 34. 49	4. 17. 14
F.	22	6. 25. 16. 47	7. 2. 16. 44	3. 55. 47	3. 31. 3
Sa.	23	7. 9. 9. 51	7. 15. 56. 0	3. 3. 37	2. 34. 0
Sun.	24	7. 22. 35. 12	7. 29. 7. 45	2. 2. 42	1. 30. 16
M.	25	8. 5. 33. 57	8. 11. 54. 9	0. 57. 8 N	0. 23. 47 N
Tu.	26	8. 18. 9. 0	8. 24. 19. 4	0. 9. 24 S	0. 42. 6 S
W.	27	9. 0. 24. 58	9. 6. 27. 24	1. 13. 56	1. 44. 39
Th.	28	9. 12. 27. 2	9. 18. 24. 28	2. 13. 58	2. 41. 36
F.	29	9. 24. 20. 28	10. 0. 15. 33	3. 7. 23	3. 31. 2
Sa.	30	10. 6. 10. 23	10. 12. 5. 34	3. 52. 24	4. 11. 16

Days of the Week.	Days of the Month.	THE MOON's Age.	Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
F.	1	12	8. 45	287. 43	294. 13	24. 46 S	24. 22 S
Sa.	2	13	9. 34	300. 39	307. 0	23. 42	22. 46
Sun.	3	14	10. 21	313. 15	319. 25	21. 35	20. 10
M.	4	15	11. 7	325. 28	331. 25	18. 32	16. 43
Tu.	5	16	11. 52	337. 16	343. 2	14. 43	12. 33
W.	6	17	12. 35	348. 44	354. 23	10. 16	7. 52
Th.	7	18	13. 17	0. 0	5. 36	5. 22	2. 49 S
F.	8	19	14. 0	11. 12	16. 51	0. 13 S	2. 25 N
Sa.	9	20	14. 44	22. 34	28. 22	5. 2 N	7. 37
Sun.	10	21	15. 30	34. 17	40. 21	10. 9	12. 36
M.	11	22	16. 19	46. 34	53. 0	14. 56	17. 7
Tu.	12	23	17. 12	59. 39	66. 30	19. 6	20. 52
W.	13	24	18. 9	73. 36	80. 55	22. 22	23. 34
Th.	14	25	19. 9	88. 26	96. 7	24. 25	24. 54
F.	15	26	20. 11	103. 55	111. 48	25. 0	24. 40
Sa.	16	27	21. 12	119. 41	127. 32	23. 56	22. 47
Sun.	17	28	22. 12	135. 18	142. 55	21. 14	19. 20
M.	18	29	23. 8	150. 23	157. 41	17. 7	14. 37
Tu.	19	30	♂	164. 48	171. 46	11. 54	9. 1
W.	20	1	0. 2	178. 35	185. 17	6. 1 N	2. 57 N
Th.	21	2	0. 53	191. 52	198. 24	0. 8 S	3. 10 S
F.	22	3	1. 43	204. 52	211. 19	6. 8	8. 59
Sa.	23	4	2. 33	217. 46	224. 14	11. 40	14. 10
Sun.	24	5	3. 23	230. 43	237. 15	16. 27	18. 31
M.	25	6	4. 14	243. 50	250. 27	20. 19	21. 51
Tu.	26	7	5. 5	257. 6	263. 47	23. 6	24. 3
W.	27	8	5. 57	270. 27	277. 8	24. 42	25. 3
Th.	28	9	6. 48	283. 46	290. 21	25. 6	24. 52
F.	29	10	7. 38	296. 51	303. 17	24. 21	23. 33
Sa.	30	11	8. 26	309. 36	315. 49	22. 30	21. 12

Days of the Week.	Days of the Month.	THE MOON's Semidiameter. Noon.	Semidiameter. Midnight.	Hor. Parallax. Noon.	Hor. Parallax. Midnight.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
		M. S.	M. S.	M. S.	M. S.		
F.	1	14. 49	14. 47	54. 21	54. 15	5201	5209
Sa.	2	14. 46	14. 45	54. 11	54. 9	5214	5217
Sun.	3	14. 45	14. 46	54. 9	54. 11	5217	5214
M.	4	14. 47	14. 48	54. 15	54. 19	5209	5203
Tu.	5	14. 50	14. 52	54. 25	54. 32	5195	5186
W.	6	14. 54	14. 56	54. 41	54. 50	5174	5162
Th.	7	14. 59	15. 2	55. 1	55. 12	5148	5133
F.	8	15. 6	15. 10	55. 25	55. 38	5116	5099
Sa.	9	15. 13	15. 17	55. 52	56. 7	5081	5062
Sun.	10	15. 22	15. 26	56. 23	56. 40	5041	5019
M.	11	15. 31	15. 37	56. 58	57. 17	4996	4972
Tu.	12	15. 42	15. 47	57. 36	57. 55	4949	4924
W.	13	15. 52	15. 58	58. 15	58. 36	4900	4874
Th.	14	16. 4	16. 9	58. 56	59. 15	4849	4826
F.	15	16. 14	16. 19	59. 34	59. 52	4802	4781
Sa.	16	16. 23	16. 27	60. 8	60. 22	4761	4745
Sun.	17	16. 30	16. 32	60. 33	60. 41	4732	4722
M.	18	16. 34	16. 34	60. 46	60. 47	4716	4715
Tu.	19	16. 33	16. 31	60. 44	60. 37	4718	4727
W.	20	16. 28	16. 24	60. 26	60. 11	4740	4758
Th.	21	16. 19	16. 13	59. 53	59. 32	4779	4805
F.	22	16. 7	16. 0	59. 9	58. 44	4833	4864
Sa.	23	15. 53	15. 46	58. 18	57. 51	4896	4930
Sun.	24	15. 38	15. 31	57. 24	56. 58	4964	4996
M.	25	15. 24	15. 18	56. 32	56. 8	5029	5060
Tu.	26	15. 12	15. 7	55. 47	55. 27	5087	5114
W.	27	15. 2	14. 58	55. 9	54. 55	5137	5155
Th.	28	14. 54	14. 52	54. 42	54. 32	5173	5186
F.	29	14. 50	14. 48	54. 25	54. 20	5195	5202
Sa.	30	14. 48	14. 47	54. 17	54. 16	5206	5207

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Pegasi.	1	66. 59. 55	65. 40. 31	64. 21. 23	63. 2. 34	61. 44. 2	60. 25. 49	59. 7. 56	57. 50. 23
	2	56. 33. 11							
α Arietis.	2	97. 23. 34	95. 57. 22	94. 31. 9	93. 4. 56	91. 38. 42	90. 12. 27	88. 46. 11	87. 19. 54
	3	85. 53. 35	84. 27. 15	83. 0. 53	81. 34. 29	80. 8. 4	78. 41. 36	77. 15. 7	75. 48. 35
	4	74. 22. 2	72. 55. 27	71. 28. 50	70. 2. 11	68. 35. 31	67. 8. 48	65. 42. 4	64. 15. 18
	5	62. 48. 31	61. 21. 43	59. 54. 54	58. 28. 6	57. 1. 18	55. 34. 30	54. 7. 44	52. 40. 59
	6	51. 14. 15							
Aldebaran.	6	80. 55. 6	79. 24. 31	77. 53. 49	76. 23. 0	74. 52. 4	73. 21. 1	71. 49. 49	70. 18. 30
	7	68. 47. 3	67. 15. 27	65. 43. 43	64. 11. 51	62. 39. 50	61. 7. 41	59. 35. 24	58. 2. 58
	8	56. 30. 24	54. 57. 41	53. 24. 50	51. 51. 50	50. 18. 41	48. 45. 22	47. 11. 55	45. 38. 19
	9	44. 4. 34	42. 30. 41	40. 56. 39	39. 22. 29	37. 48. 10	36. 13. 41	34. 39. 5	33. 4. 23
	10	31. 29. 33	29. 54. 35	28. 19. 35	26. 44. 31	25. 9. 24	23. 34. 17	21. 59. 10	20. 24. 7
	11	18. 49. 7							
Pollux.	11	62. 38. 49	61. 1. 15	59. 23. 27	57. 45. 24	56. 7. 7	54. 28. 35	52. 49. 49	51. 10. 49
	12	49. 31. 34	47. 52. 5	46. 12. 22	44. 32. 24	42. 52. 11	41. 11. 42	39. 30. 59	37. 50. 1
	13	36. 8. 49	34. 27. 23	32. 45. 44	31. 3. 52	29. 21. 47			

Stars Names.	Days	Noon.	III h.	VI h.	IX h.	Midnight.	XV h.	XVIII h.	XXI h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	11	120. 47. 22	119. 17. 18	117. 46. 58	116. 16. 23	114. 45. 33	113. 14. 27	111. 43. 5	110. 11. 27
	12	108. 39. 33	107. 7. 23	105. 34. 57	104. 2. 14	102. 29. 14	100. 55. 57	99. 22. 22	97. 48. 31
	13	96. 14. 22	94. 39. 56	93. 5. 12	91. 30. 11	89. 54. 52	88. 19. 15	86. 43. 20	85. 7. 8
	14	83. 30. 38	81. 53. 50	80. 16. 44	78. 39. 20	77. 1. 39	75. 23. 40	73. 45. 24	72. 6. 51
	15	70. 28. 1	68. 48. 53	67. 9. 29	65. 29. 49	63. 49. 52	62. 9. 39	60. 29. 12	58. 48. 31
	16	57. 7. 35	55. 26. 25	53. 45. 3	52. 3. 29	50. 21. 43	48. 39. 44	46. 57. 36	45. 15. 19
	17	43. 32. 53	41. 50. 19	40. 7. 41	38. 24. 59				
Antares.	21	- - -	- - -	- - -	- - -	49. 30. 15	47. 44. 5	45. 58. 19	44. 12. 57
	22	42. 28. 1	40. 43. 31	38. 59. 30	37. 15. 58	35. 32. 55	33. 50. 23	32. 8. 23	30. 26. 56
	23	28. 46. 3							
α Aquilæ.	23	79. 33. 52	78. 8. 23	76. 43. 27	75. 19. 5	73. 55. 19	72. 32. 9	71. 9. 39	69. 47. 48
	24	68. 26. 38	67. 6. 9	65. 46. 26	64. 27. 28	63. 9. 18	61. 51. 58	60. 35. 29	59. 19. 51
	25	58. 5. 9							
Fomalhaut.	25	86. 5. 41	84. 33. 36	83. 1. 52	81. 30. 30	79. 59. 29	78. 28. 50	76. 58. 32	75. 28. 35
	26	73. 58. 59	72. 29. 44	71. 0. 50	69. 32. 17	68. 4. 5	66. 36. 13	65. 8. 42	63. 41. 32
	27	62. 14. 42							
α Pegasi.	27	81. 13. 40	79. 50. 52	78. 28. 22	77. 6. 7	75. 44. 9	74. 22. 28	73. 1. 4	71. 39. 58
	28	70. 19. 9	68. 58. 38	67. 38. 25	66. 18. 31	64. 58. 56	63. 39. 39	62. 20. 43	61. 2. 7
	29	59. 43. 52	58. 26. 1	57. 8. 33	55. 51. 29	54. 34. 49			
α Arietis.	29	- - -	- - -	- - -	- - -	95. 6. 23	93. 40. 4	92. 13. 46	90. 47. 28
	30	89. 21. 10	87. 54. 52	86. 28. 33	85. 2. 14	83. 35. 54	82. 9. 33	80. 43. 11	79. 16. 47
	O. 1	77. 50. 22							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	IIIh.	VIh.	IXh.	*Midnight.*	XVh.	XVIIIh.	XXIh.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	39. 6. 22	40. 34. 19	42. 2. 16	43. 30. 13	44. 58. 9	46. 26. 5	47. 54. 2	49. 21. 59
	2	50. 49. 57	52. 17. 56	53. 45. 56	55. 13. 57	56. 42. 0	58. 10. 5	59. 38. 12	61. 6. 22
	3	62. 34. 35	64. 2. 51	65. 31. 10	66. 59. 32	68. 27. 57	69. 56. 27	71. 25. 1	72. 53. 40
	4	74. 22. 22	75. 51. 9	77. 20. 1	78. 48. 58	80. 18. 0	81. 47. 8	83. 16. 21	84. 45. 41
	5	86. 15. 6	87. 44. 37	89. 14. 15	90. 43. 59	92. 13. 49	93. 43. 46	95. 13. 51	96. 44. 2
	6	98. 14. 20	99. 44. 45	101. 15. 17	102. 45. 56	104. 16. 43	105. 47. 37	107. 18. 40	108. 49. 50
	7	110. 21. 9							
α Aquilæ.	7	66. 2. 0	67. 16. 33	68. 31. 33	69. 47. 0	71. 2. 53	72. 19. 10	73. 35. 48	74. 52. 48
	8	76. 10. 10	77. 27. 49	78. 45. 46	80. 4. 1	81. 22. 33	82. 41. 20	84. 0. 22	85. 19. 37
	9	86. 39. 5							
Fomalhaut.	9	52. 58. 31	54. 27. 6	55. 56. 5	57. 25. 27	58. 55. 11	60. 25. 17	61. 55. 43	63. 26. 30
	10	64. 57. 37	66. 29. 1	68. 0. 44	69. 32. 45	71. 5. 5	72. 37. 43	74. 10 39	75. 43. 52
	11	77. 17. 23	78. 51. 9	80. 25. 12	81. 59. 31	83. 34. 6	85. 8. 57	86. 44. 5	88. 19. 28
	12	89. 55. 7							
α Arietis.	12	28. 50. 47	30. 19. 11	31. 48. 44	33. 19. 24	34. 51. 6	36. 23. 47	37. 57. 20	39. 31. 44
	13	41. 6. 56	42. 42. 46	44. 19. 14	45. 56. 21	47. 34. 5	49. 12. 22	50. 51. 11	52. 30. 29
	14	54. 10. 15							

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	14	22. 31. 30	24. 13. 58	25. 56. 57	27. 40. 26	29. 24. 23	31. 8. 48	32. 53. 38	34. 38. 53
	15	36. 24. 32	38. 10. 32	39. 56. 52	41. 43. 34	43. 30. 36	45. 17. 57	47. 5. 36	48. 53. 32
	16	50. 41. 47	52. 30. 18	54. 19. 4	56. 8. 6	57. 57. 23	59. 46. 55	61. 36. 40	63. 26. 37
	17	65. 16. 47	67. 7. 7	68. 57. 37	70. 48. 17	72. 39. 4			
Pollux.	17	- - -	- - -	- - -	- - -	28. 33. 9	30. 23. 23	32. 13. 49	34. 4. 27
	18	35. 55. 15	37. 46. 11	39. 37. 13	41. 28. 21	43. 19. 33	45. 10. 49	47. 2. 2	48. 53. 16
	19	50. 44. 29							
The Sun.	23	38. 22. 43	39. 56. 47	41. 30. 28	43. 3. 46	44. 36. 43	46. 9. 17	47. 41. 29	49. 13. 19
	24	50. 44. 46	52. 15. 50	53. 46. 32	55. 16. 52	56. 46. 50	58. 16. 25	59. 45. 39	61. 14. 31
	25	62. 43. 2	64. 11. 10	65. 38. 58	67. 6. 25	68. 33. 33	70. 0. 21	71. 26. 50	72. 53. 1
	26	74. 18. 53	75. 44. 27	77. 9. 45	78. 34. 46	79. 59. 30	81. 23. 59	82. 48. 13	84. 12. 13
	27	85. 35. 58	86. 59. 29	88. 22. 47	89. 45. 54	91. 8. 47	92. 31. 30	93. 54. 3	95. 16. 25
	28	96. 38. 38	98. 0. 41	99. 22. 36	100. 44. 23	102. 6. 3	103. 27. 36	104. 49. 4	106. 10. 27
	29	107. 31. 44	108. 52. 55	110. 14. 3	111. 35. 7	112. 56. 8	114. 17. 7	115. 38. 4	116. 59. 1
	30	118. 19. 56	119. 40. 51	121. 1. 46					
Antares.	27	- - -	- - -	- - -	- - -	29. 36. 33	31. 5. 26	32. 34. 14	34. 2. 58
	28	35. 31. 39	37. 0. 16	38. 28. 49	39. 57. 19	41. 25. 45	42. 54. 8	44. 22. 28	45. 50. 46
	29	47. 19. 1	48. 47. 13	50. 15. 23	51. 43. 32	53. 11. 40	54. 39. 47	56. 7. 54	57. 36. 1
	30	59. 4. 9	60. 32. 19	62. 0. 30	63. 28. 44	64. 56. 59	66. 25. 17	67. 53. 38	69. 22. 2
	O.1	70. 50. 29							

CONFIGURATIONS of the SATELLITES of JUPITER at XI o'Clock *at Night*.

| | | |

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.
Sun.	1	16*th Sunday after Trinity.*
M.	2	[Remigius.
Tu.	3	
W.	4	
Th.	5	
F.	6	Faith.
Sa.	7	
Sun.	8	17*th Sunday after Trinity.*
M.	9	St. Denys.
Tu.	10	Oxf. and Camb. Terms
W.	11	[begin.
Th.	12	
F.	13	Transf. of K. Edw. Conf.
Sa.	14	
Sun.	15	18*th Sunday after Trinity.*
M.	16	
Tu.	17	Etheldred.
W.	18	*St. Luke.*
Th.	19	
F.	20	
Sa.	21	
Sun.	22	19*th Sunday after Trinity.*
M.	23	
Tu.	24	
W.	25	*K. Geo.* III. *Accef.* Crisp.
Th.	26	*K.G.*III.*proclaimed* 1760.
F.	27	
Sa.	28	*St. Simon and St. Jude.*
Sun.	29	20*th Sunday after Trinity.*
M.	30	
Tu.	31	

Phases of the MOON.

	D. H. M.
○ Full Moon -----	5. 12. 23
☾ *Last Quarter* ----	12. 19. 31
● New Moon -----	19. 13. 19
☽ *First Quarter* ----	27. 5. 7

Other *Phenomena.*

D. H. M.	
1. - -	☿ Stationary.
1. - -	♀ α ♎, ✱ 53′ N.
3. 3. 40	☽ 2 ad ↓ ♒
3. 3. 48	☽ 3 ad ↓ ♒
4. 3. 34	☽ 33 ♓
5. - -	♂ β ♍, ✱ 24′ S.
10. 3. 57	☽ ι ♉
10. 22. 52	☽ 132 ♉
11. 20. 34	☽ ε ♊
12. 20. 13	☽ κ ♊
13. 19. 47	☽ γ ♋
15. 5. 51	☽ η ♌
15. - -	♀ δ ♏, ✱ 42′ S.
16. 14. 22	☽ ι ♌
17. - -	♃ σ ♌, ✱ 58′ N.
17. - -	♂ η ♍, ✱ 19′ N.
21. 23. 56	☽ β ♏
22. - -	☿ Stationary.
22. 2. 36	☽ ν ♏
22. 10. 14	☉ enters ♏
23. - -	♄ Stationary.
23. 11. 38	☽ β Ophiuchi
24. 14. 39	☽ λ ♐
25 2. 34	☽ σ ♐
28. 6. 36	☽ ε ♑
30. 11. 49	☽ 2 ad ↓ ♒
30. 11. 57	☽ 3 ad ↓ ♒
31. 12. 53½ I.	
31. 13. 23¾ F.	33 ♓, ✱ 12′¼ S. 14′¼ S. of ☽'s ☾
31. - -	♀ θ Ophiuchi, ✱ 8′ N.

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. South.	Equation of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	6. 8. 45. 18	12. 32. 9, 8	3. 28. 30	10. 33, 5	18, 7
M.	2	6. 9. 44. 26	12. 35. 47, 6	3. 51. 47	10. 52, 2	18, 4
Tu.	3	6. 10. 43. 34	12. 39. 25, 7	4. 15. 1	11. 10, 6	18, 0
W.	4	6. 11. 42. 45	12. 43. 4, 2	4. 38. 12	11. 28, 6	17, 7
Th.	5	6. 12. 41. 58	12. 46. 43, 0	5. 1. 19	11. 46, 3	17, 3
F.	6	6. 13. 41. 13	12. 50. 22, 2	5. 24. 23	12. 3, 6	16, 8
Sa.	7	6. 14. 40. 31	12. 54. 1, 9	5. 47. 24	12. 20, 4	16, 5
Sun.	8	6. 15. 39. 50	12. 57. 41, 9	6. 10. 19	12. 36, 9	16, 0
M.	9	6. 16. 39. 12	13. 1. 22, 5	6. 33. 10	12. 52, 9	15, 5
Tu.	10	6. 17. 38. 36	13. 5. 3, 5	6. 35. 55	13. 8, 4	15, 0
W.	11	6. 18. 38. 3	13. 8. 45, 0	7. 18. 35	13. 23, 4	14, 5
Th.	12	6. 19. 37. 31	13. 12. 27, 0	7. 41. 9	13. 37, 9	13, 9
F.	13	6. 20. 37. 3	13. 16. 9, 6	8. 3. 37	13. 51, 8	13, 4
Sa.	14	6. 21. 36. 36	13. 19. 52, 7	8. 25. 59	14. 5, 2	12, 8
Sun.	15	6. 22. 36. 12	13. 23. 36, 4	8. 48. 13	14. 18, 0	12, 2
M.	16	6. 23. 35. 51	13. 27. 20, 7	9. 10. 20	14. 30, 2	11, 6
Tu.	17	6. 24. 35. 32	13. 31. 5, 7	9. 32. 19	14. 41, 8	11, 0
W.	18	6. 25. 35. 15	13. 34. 51, 2	9. 54. 10	14. 52, 8	10, 4
Th.	19	6. 26. 35. 0	13. 38. 37, 4	10. 15. 53	15. 3, 2	9, 7
F.	20	6. 27. 34. 47	13. 42. 24, 2	10. 37. 26	15. 12, 9	9, 0
Sa.	21	6. 28. 34. 36	13. 46. 11, 7	10. 58. 49	15. 21. 9	8, 4
Sun.	22	6. 29. 34. 28	13. 49. 59, 9	11. 20. 4	15. 30, 3	7, 7
M.	23	7. 0. 34. 20	13. 53. 48, 7	11. 41. 7	15. 38, 0	7, 0
Tu.	24	7. 1. 34. 15	13. 57. 38, 2	12. 2. 0	15. 45, 0	6, 3
W.	25	7. 2. 34. 12	14. 1. 28, 5	12. 22. 42	15. 51, 3	5, 6
Th.	26	7. 3. 34. 10	14. 5. 19, 4	12. 43. 12	15. 56, 9	4, 9
F.	27	7. 4. 34. 10	14. 9. 11, 1	13. 3. 30	16. 1, 8	4, 1
Sa.	28	7. 5. 34. 11	14. 13. 3, 5	13. 23. 35	16. 5, 9	3, 4
Sun.	29	7. 6. 34. 14	14. 16. 56, 6	13. 43. 28	16. 9, 3	2, 7
M.	30	7. 7. 34. 19	14. 20. 50, 5	14. 3. 8	16. 12, 0	1, 8
Tu.	31	7. 8. 34. 25	14. 24. 45, 2	14. 22. 34	16. 13, 8	

Days	Time of ☉'s Semidiam. passg Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 4, 3	16. 2, 8	2. 27, 8	9. 999950	2. 16. 44
7	1. 4, 6	16. 4, 5	2. 28, 4	9. 999191	2. 16. 25
13	1. 5, 0	16. 6, 1	2. 28, 9	9. 998461	2. 16. 6
19	1. 5, 6	16. 7, 8	2. 29, 3	9. 997742	2. 15. 47
25	1. 6, 2	16. 9, 5	2. 29, 8	9. 997023	2. 15. 28

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.

Days.	H. M. S.
	Immersions.
* 2	9. 35. 29
4	4. 4. 40
5	22. 33. 52
	Emersions.
7	19. 12. 30
* 9	13. 41. 41
*11	8. 10. 46
13	2. 39. 55
14	21. 9. 0
*16	15. 38. 6
*18	10. 7. 7
20	4. 36. 9
21	23. 5. 8
23	17. 34. 8
*25	12. 3. 3
*27	6. 32. 2
29	1. 0. 52
30	19. 29. 40

II. Satellite.

Days.	H. M. S.
	Immersions.
* 4	11. 48. 20
	Emersions.
8	3. 44. 48
*11	17. 4. 16
*15	6. 23. 38
18	19. 42. 53
*22	9. 2. 0
25	22. 20. 57
*29	11. 39. 44

III. Satellite.

Days.	H. M. S.	
* 3	8. 15. 24	Im.
* 3	10. 30. 57	E.
*10	12. 18. 49	Im.
*10	14. 33. 25	E.
*17	16. 22. 20	Im.
17	18. 35. 47	E.
24	20. 25. 31	Im.
24	22. 37. 49	E.

IV. Satellite.

* 2	13. 15. 48	Im.
* 2	13. 28. 11	E.
	CONJUNCTIONS	
10	21. 58	Inf.
19	4. 41	Sup.
*27	12. 9	Inf.

THE PLANETS

Days	Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
	☿ Gr. Elong. 29d. *MERCURY.*				Inf. ☌ 13d. 23h/4.	
1	10. 25. 10	6. 55 S	6. 29. 38	3. 35 S	14. 43 S	1. 13
4	11. 7. 7	6. 32	6. 29. 4	3. 27	14. 23	1. 0
7	11. 20. 10	5. 48	6. 27. 19	3. 4	13. 23	0. 43
10	0. 4. 28	4. 39	6. 24. 26	2. 25	11. 44	0. 22
13	0. 20. 7	3. 4	6. 20. 52	1. 32	9. 34	23. 51
16	1. 7. 6	1. 5 S	6. 17. 24	0. 30 S	7. 18	23. 30
19	1. 25. 13	1. 8 N	6. 14. 57	0. 29 N	5. 27	23. 12
22	2. 14. 1	3. 18	6. 14. 4	1. 16	4. 24	23. 2
25	3. 2. 54	5. 8	6. 14. 50	1. 48	4. 12	22. 55
28	3. 21. 14	6. 22	6. 17. 1	2. 6	4. 45	22. 53
31	4. 8. 28	6. 56	6. 20. 15	2. 11	5. 54	22. 54
	♀ *VENUS.*					
1	9. 0. 14	0. 54 S	7. 11. 45	0. 30 S	15. 51 S	2. 5
7	9. 9. 43	1. 26	7. 19. 1	0. 48	18. 16	2. 11
13	9. 19. 12	1. 55	7. 26. 16	1. 7	20. 26	2. 19
19	9. 28. 41	2. 21	8. 3. 29	1. 25	22. 16	2. 26
25	10. 8. 10	2. 43	8. 10. 42	1. 41	23. 45	2. 34
	♂ *MARS.*					87d. 5h.
1	5. 10. 40	1. 43 N	5. 21. 9	1. 6 N	4. 31 N	22. 56
7	5. 13. 18	1. 40	5. 24. 59	1. 5	3. 0	22. 48
13	5. 15. 56	1. 38	5. 28. 49	1. 4	1. 27 N	22. 40
19	5. 18. 34	1. 36	6. 2. 39	1. 3	0. 5 S	22. 31
25	5. 21. 13	1. 33	6. 6. 30	1. 2	1. 38	22. 22
	♃ *JUPITER.*					87d. 5h.
1	0. 14. 19	1. 19 S	0. 15. 43	1. 39 S	4. 40 N	12. 26
11	0. 15. 14	1. 19	0. 14. 22	1. 38	4. 9	11. 45
21	0. 16. 9	1. 19	0. 13. 4	1. 38	3. 40	11. 3
	♄ *SATURN.*					□ 3d. 23h.
1	3. 5. 13	0. 43 S	3. 11. 34	0. 43 S	22. 15 N	18. 15
11	3. 5. 35	0. 42	3. 11. 54	0. 43	22. 13	17. 40
21	3. 5. 57	0. 41	3. 12. 2	0. 43	22. 12	17. 3
	♅ *GEORGIAN.*					
1	5. 13. 42	0. 46 N	5. 14. 58	0. 44 N	6. 36 N	22. 30
11	5. 13. 50	0. 46	5. 15. 32	0. 44	6. 23	21. 56
21	5. 13. 58	0. 46	5. 16. 4	0. 44	6. 11	21. 20

Days of the Week.	Days of the Month.	THE MOON's Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sun.	1	10. 18. 1. 31	10. 23. 58. 47	4. 27. 27 S	4. 40. 46 S
M.	2	10. 29. 57. 45	11. 5. 58. 45	4. 51. 4	4. 58. 11
Tu.	3	11. 12. 2. 6	11. 18. 8. 1	5. 2. 0	5. 2. 24
W.	4	11. 24. 16. 42	0. 0. 28. 15	4. 59. 19	4. 52. 42
Th.	5	0. 6. 42. 44	0. 13. 0. 9	4. 42. 31	4. 28. 49
F.	6	0. 19. 20. 33	0. 25. 43. 49	4. 11. 41	3. 51. 14
Sa.	7	1. 2. 10. 0	1. 8. 38. 58	3. 27. 39	3. 1. 12
Sun.	8	1. 15. 10. 44	1. 21. 45. 13	2. 32. 8	2. 0. 48
M.	9	1. 28. 22. 28	2. 5. 2. 25	1. 27. 33	0. 52. 50 S
Tu.	10	2. 11. 45. 11	2. 18. 30. 46	0. 17. 7 S	0. 19. 8 N
W.	11	2. 25. 19. 15	3. 2. 10. 42	0. 55. 24 N	1. 31. 8
Th.	12	3. 9. 5. 10	3. 16. 2. 40	2. 5. 50	2. 38. 54
F.	13	3. 23. 3. 15	4. 0. 6. 48	3. 9. 50	3. 38. 5
Sa.	14	4. 7. 13. 13	4. 14. 22. 17	4. 3. 10	4. 24. 35
Sun.	15	4. 21. 33. 41	4. 28. 46. 59	4. 41. 58	4. 54. 55
M.	16	5. 6. 1. 40	5. 13. 17. 5	5. 3. 13	5. 6. 40
Tu.	17	5. 20. 32. 31	5. 27. 47. 13	5. 5. 10	4. 58. 47
W.	18	6. 5. 0. 20	6. 12. 11. 4	4. 47. 41	4. 32. 4
Th.	19	6. 19. 18. 38	6. 26. 22. 15	4. 12. 17	3. 48. 48
F.	20	7. 3. 21. 22	7. 10. 15. 25	3. 22. 5	2. 52. 41
Sa.	21	7. 17. 4. 2	7. 23. 46. 59	2. 21. 8	1. 48. 1
Sun.	22	8. 0. 24. 10	8. 6. 55. 37	1. 13. 50	0. 39. 7 N
M.	23	8. 13. 21. 27	8. 19. 41. 59	0. 4. 20 N	0. 30. 3 S
Tu.	24	8. 25. 57. 32	9. 2. 8. 34	1. 3. 39 S	1. 36. 6
W.	25	9. 8. 15. 35	9. 14. 19. 7	2. 7. 6	2. 36. 24
Th.	26	9. 20. 19. 48	9. 26. 18. 15	3. 3. 43	3. 28. 52
F.	27	10. 2. 15. 2	10. 8. 10. 52	3. 51. 39	4. 11. 52
Sa.	28	10. 14. 6. 24	10. 20. 2. 11	4. 29. 23	4. 43. 59
Sun.	29	10. 25. 58. 53	11. 1. 57. 2	4. 55. 36	5. 4. 2
M.	30	11. 7. 57. 10	11. 13. 59. 47	5. 9. 14	5. 11. 0
Tu.	31	11. 20. 5. 18	11. 26. 14. 6	5. 9. 18	5. 4. 3

Days of the Week.	Days of the Month.	THE MOON'S Age.	Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Sun.	1	12	9. 13	321. 55	327. 56	19. 41 S	17. 57 S
M.	2	13	9. 57	333. 50	339. 39	16. 2	13. 57
Tu.	3	14	10. 41	345. 24	351. 5	11. 42	9. 20
W.	4	15	11. 24	356. 44	2. 23	6. 51	4. 17 S
Th.	5	16	12. 6	8. 1	13. 42	1. 39 S	1. 1 N
F.	6	17	12. 50	19. 27	25. 16	3. 42 N	6. 22
Sa.	7	18	13. 36	31. 11	37. 15	8. 59	11. 32
Sun.	8	19	14. 25	43. 28	49. 52	13. 59	16. 17
M.	9	20	15. 17	56. 28	63. 16	18. 24	20. 18
Tu.	10	21	16. 13	70. 16	77. 29	21. 56	23. 17
W.	11	22	17. 11	84. 52	92. 24	24. 18	24. 58
Th.	12	23	18. 11	100. 3	107. 45	25. 15	25. 8
F.	13	24	19. 12	115. 28	123. 9	24. 37	23. 42
Sa.	14	25	20. 10	130. 45	138. 13	22. 24	20. 45
Sun.	15	26	21. 5	145. 32	152. 43	18. 47	16. 31
M.	16	27	21. 58	159. 44	166. 36	14. 0	11. 17
Tu.	17	28	22. 48	173. 20	179. 58	8. 26	5. 27 N
W.	18	29	23. 38	186. 30	192. 58	2. 25 N	0. 39 S
Th.	19	1	♂	199. 25	205. 51	3. 40 S	6. 38
F.	20	2	0. 28	212. 17	218. 46	9. 29	12. 11
Sa.	21	3	1. 18	225. 17	231. 52	14. 42	17. 0
Sun.	22	4	2. 8	238. 30	245. 12	19. 3	20. 51
M.	23	5	3. 0	251. 58	258. 45	22. 21	23. 34
Tu.	24	6	3. 53	265. 34	272. 22	24. 28	25. 3
W.	25	7	4. 45	279. 8	285. 51	25. 19	25. 17
Th.	26	8	5. 36	292. 30	299. 3	24. 57	24. 20
F.	27	9	6. 25	305. 28	311. 47	23. 26	22. 17
Sa.	28	10	7. 12	317. 58	324. 2	20. 54	19. 18
Sun.	29	11	7. 57	329. 59	335. 50	17. 30	15. 31
M.	30	12	8. 41	341. 36	347. 18	13. 22	11. 5
Tu.	31	13	9. 23	352. 57	358. 34	8. 40	6. 9

Days of the Week.	Days of the Month.	THE MOON's Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
Sun.	1	14. 48	14. 49	54. 17	54. 23	5206	5198
M.	2	14. 51	14. 53	54. 29	54. 37	5190	5179
Tu.	3	14. 55	14. 58	54. 46	54. 56	5167	5154
W.	4	15. 1	15. 5	55. 8	55. 21	5138	5122
Th.	5	15. 8	15. 12	55. 34	55. 48	5104	5086
F.	6	15. 16	15. 20	56. 3	56. 17	5067	5049
Sa.	7	15. 24	15. 28	56. 32	56. 47	5029	5010
Sun.	8	15. 32	15. 36	57. 2	57. 16	4991	4973
M.	9	15. 40	15. 44	57. 31	57. 45	4955	4937
Tu.	10	15. 48	15. 52	57. 59	58. 13	4919	4902
W.	11	15. 56	15. 59	58. 27	58. 40	4885	4869
Th.	12	16. 2	16. 6	58. 52	59. 4	4854	4839
F.	13	16. 9	16. 12	59. 16	59. 26	4824	4812
Sa.	14	16. 14	16. 16	59. 35	59. 43	4801	4792
Sun.	15	16. 18	16. 19	59. 49	59. 53	4784	4779
M.	16	16. 20	16. 20	59. 55	59. 55	4777	4777
Tu.	17	16. 19	16. 17	59. 52	59. 47	4781	4787
W	18	16. 15	16. 12	59. 39	59. 28	4797	4810
Th.	19	16. 8	16. 4	59. 14	58. 58	4827	4846
F.	20	15. 59	15. 53	58. 39	58. 19	4870	4895
Sa.	21	15. 47	15. 41	57. 57	57. 35	4922	4950
Sun.	22	15. 35	15. 29	57. 12	56. 49	4979	5008
M.	23	15. 23	15. 17	56. 27	56. 6	5036	5063
Tu.	24	15. 12	15. 7	55. 46	55. 28	5089	5112
W.	25	15. 2	14. 58	55. 11	54. 57	5134	5153
Th.	26	14. 55	14. 52	54. 45	54. 35	5169	5182
F.	27	14. 51	14. 49	54. 28	54. 24	5191	5197
Sa.	28	14. 49	14. 49	54. 22	54. 23	5199	5198
Sun.	29	14. 50	14. 52	54. 26	54. 32	5194	5186
M.	30	14. 54	14. 56	54. 40	54. 50	5175	5162
Tu.	31	15. 0	15. 4	55. 3	55. 18	5145	5125

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	1	77. 50. 23	76. 23. 54	74. 57. 23	73. 30. 49	72. 4. 13	70. 37. 34	69. 10. 52	67. 44. 7
	2	66. 17. 19	64. 50. 28	63. 23. 33	61. 56. 37	60. 29. 37	59. 2. 34	57. 35. 29	56. 8. 23
	3	54. 41. 15	53. 14. 5	51. 46. 55	50. 19. 46	48. 52. 38	47. 25. 32	45. 58. 28	44. 31. 28
	4	43. 4. 32							
Aldebaran.	4	72. 19. 59	70. 48. 4	69. 15. 57	67. 43. 40	66. 11. 11	64. 38. 32	63. 5. 41	61. 32. 40
	5	59. 59. 28	58. 26. 4	56. 52. 30	55. 18. 45	53. 44. 50	52. 10. 43	50. 36. 26	49. 1. 58
	6	47. 27. 20	45. 52. 31	44. 17. 32	42. 42. 24	41. 7. 7	39. 31. 40	37. 56. 5	36. 20. 22
	7	34. 44. 32	33. 8. 34	31. 32. 30	29. 56. 24	28. 20. 13	26. 44. 2	25. 7. 50	23. 31. 39
	8	21. 55. 31							
Pollux.	8	65. 46. 37	64. 8. 19	62. 29. 49	60. 51. 8	59. 12. 16	57. 33. 13	55. 54. 0	54. 14. 36
	9	52. 35. 2	50. 55. 18	49. 15. 24	47. 35. 21	45. 55. 7	44. 14. 44	42. 34. 12	40. 53. 30
	10	39. 12. 39							
Regulus.	10	75. 15. 43	73. 34. 31	71. 53. 8	70. 11. 36	68. 29. 52	66. 47. 58	65. 5. 54	63. 23. 41
	11	61. 41. 17	59. 58. 43	58. 15. 59	56. 33. 6	54. 50. 4	53. 6. 52	51. 23. 32	49. 40. 2
	12	47. 56. 24	46. 12. 37	44. 28. 41	42. 44. 39	41. 0. 28	39. 16. 11	37. 31. 48	35. 47. 18
	13	34. 2. 42							

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	10	- - -	- - -	- - -	- - -	119. 37. 35	118. 3. 7	116. 28. 29	114. 53. 39
	11	113. 18. 37	111. 43. 25	110. 8. 1	108. 32. 27	106. 56. 42	105. 20. 46	103. 44. 40	102. 8. 23
	12	100. 31. 56	98. 55 18	97. 18. 29	95. 41. 30	94. 4. 20	92. 27. 0	90. 49. 31	89. 11. 51
	13	87. 34. 2	85. 56. 2	84. 17. 53	82. 39. 35	81. 1. 7	79. 22. 30	77. 43. 44	76. 4. 50
	14	74. 25. 47	72. 46. 36	71. 7. 17	69. 27. 51	67. 48. 17	66. 8. 36	64. 28. 49	62. 48. 55
	15	61. 8. 55	59. 28. 50	57. 48. 40	56. 8. 26	54. 28. 7	52. 47. 44	51. 7. 19	49. 26. 52
	16	47. 46. 23	46. 5. 52	44. 25. 22	42. 44. 53	41. 4. 24	39. 23. 57		
α Aquilæ.	21	73. 2. 43	71. 39. 17	70. 16. 26	68. 54. 12	67. 32. 38	66. 11. 45	64. 51. 38	63. 32. 17
	22	62. 13. 42	60. 56. 0	59. 39. 11	58. 23. 17	57. 8. 20			
Fomalhaut.	22	- - -	- - -	- - -	- - -	84. 42. 59	83. 9. 29	81. 36. 20	80. 3. 32
	23	78. 31. 6	76. 59. 1	75. 27. 19	73. 55. 58	72. 25. 0	70. 54. 24	69. 24. 10	67 54. 19
	24	66. 24. 51	64. 55. 45	63. 27. 3	61. 58. 44	60. 30. 48			
α Pegasi.	24	- - -	- - -	- - -	- - -	79. 43. 52	78. 20. 8	76. 56. 45	75. 33. 41
	25	74. 10. 57	72. 48. 33	71. 26. 30	70. 4. 49	68. 43. 28	67. 22. 29	66. 1. 52	64. 41. 38
	26	63. 21. 47	62. 2. 20	60. 43. 17	59. 24. 40	58. 6. 28			
α Arietis.	26	- - -	- - -	- - -	- - -	98. 59. 38	97. 32. 43	96. 5. 53	94. 39. 7
	27	93. 12. 27	91. 45. 51	90. 19. 18	88. 52. 48	87. 26. 22	85. 59. 58	84. 33. 35	83. 7. 15
	28	81. 40. 56	80. 14. 38	78. 48. 21	77. 22. 4	75. 55. 47	74. 29. 29	73. 3. 10	71. 36. 50
	29	70. 10. 29	68. 44. 6	67. 17. 41	65. 51. 14	64. 24. 45	62. 58. 1	61. 31. 39	60. 5. 3
	30	58. 38. 23							
Aldebaran.	30	88. 31. 40	87. 1. 57	85. 32. 4	84. 2. 1	82. 31. 48	81. 1. 24	79. 30. 49	78. 0. 3
	31	76. 29. 5	74. 57. 55	73. 26. 33	71. 54. 57	70. 23. 9	68. 51. 7	67. 18. 51	65. 46. 21
	N 1	64. 13. 36							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	70. 50. 30	72. 19. 2	73. 47. 40	75. 16. 23	76. 45. 12	78. 14. 7	79. 43. 8	81. 12. 16
	2	82. 41. 30	84. 10. 51	85. 40. 20	87. 9. 57	88. 39. 42	90. 9. 35	91. 39. 36	93. 9. 47
	3	94. 40. 6	96. 10. 35	97. 41. 14	99. 12. 3	100. 43. 1	102. 14. 9	103. 45. 28	105. 16. 58
	4	106. 48. 38							
α Aquilæ.	4	63. 11. 5	64. 24. 45	65. 39. 1	66. 53. 49	68. 9. 8	69. 24. 58	70. 41. 14	71. 57. 58
	5	73. 15. 9	74. 32. 43	75. 50. 40	77. 8. 58	78. 27. 39	79. 46. 39	81. 5. 57	82. 25. 33
	6	83. 45. 25							
Fomalhaut.	6	49. 50. 38	51. 19. 37	52. 49. 2	54. 18. 55	55. 49. 12	57. 19. 54	58. 50. 58	60. 22. 25
	7	61. 54. 13	63. 26. 20	64. 58. 46	66. 31. 30	68. 4. 33	69. 37. 54	71. 11. 31	72. 45. 24
	8	74. 19. 32							
α Pegasi.	8	57. 50. 16	59. 16. 27	60. 43. 11	62. 10. 27	63. 38. 11	65. 6. 25	66. 35. 3	68. 4. 8
	9	69. 33. 38	71. 3. 30	72. 33. 41	74. 4. 14	75. 35. 7	77. 6. 17	78. 37. 45	80. 9. 29
	10	81. 41. 28							
α Arietis.	10	38. 8. 5	39. 42. 41	41. 17. 52	42. 53. 37	44. 29. 54	46. 6. 42	47. 43. 57	49. 21. 39
	11	50. 59. 48	52. 38. 18	54. 17. 9	55. 56. 22	57. 35. 55	59. 15. 46	60. 55. 56	62. 36. 22
	12	64. 17. 4							

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	12	32. 58. 9	34. 41. 21	36. 24. 49	38. 8. 31	39. 52. 29	41. 36. 40	43. 21. 5	45. 5. 43
	13	46. 50. 34	48. 35. 36	50. 20. 50	52. 6. 15	53. 51. 51	55. 37. 38	57. 23. 35	59. 9. 42
	14	60. 55. 59	62. 42. 25	64. 29. 0	66. 15. 44	68. 2. 36	69. 49. 36	71. 36. 44	73. 23. 59
	15	75. 11. 21							
Pollux.	15	31. 2. 11	32. 49. 15	34. 36. 29	36. 23. 52	38. 11. 22	39. 59. 0	41. 46. 43	43. 34. 33
	16	45. 22. 27	47. 10. 25	48. 58. 26	50. 46. 29	52. 34. 35	54. 22. 42	56. 10. 48	57. 58. 54
	17	59. 47. 0	61. 35. 4	63. 23. 5	65. 11. 2	66. 58. 57	68. 46. 47	70. 34. 30	72. 22. 8
	18	74. 9. 40							
The Sun.	22	- - -	- - -	- - -	- - -	- - -	- - -	39. 49. 56	41. 18. 41
	23	42. 47. 7	44. 15. 15	45. 43. 4	47. 10. 36	48. 37. 49	50. 4. 43	51. 31. 20	52. 57. 40
	24	54. 23. 42	55. 49. 27	57. 14. 56	58. 40. 9	60. 5. 7	61. 29. 49	62. 54. 16	64. 18. 29
	25	65. 42. 27	67. 6. 11	68. 29. 42	69. 53. 1	71. 16. 9	72. 39. 4	74. 1. 49	75. 24. 23
	26	76. 46. 47	78. 9. 2	79. 31. 8	80. 53. 7	82. 14. 57	83. 36. 39	84. 58. 16	86. 19. 46
	27	87. 41. 11	89. 2. 31	90. 23. 48	91. 45. 2	93. 6. 12	94. 27. 20	95. 48. 27	97. 9. 33
	28	98. 30. 38	99. 51. 43	101. 12. 48	102. 33. 56	103. 55. 4	105. 16. 15	106. 37. 30	107. 58. 49
	29	109. 20. 11	110. 41. 38	112. 3. 10	113. 24. 48	114. 46. 32	116. 8. 23	117. 30. 21	118. 52. 28
	30	120. 14. 43							
Antares.	27	55. 9. 45	56. 38. 10	58. 6. 33	59. 34. 55	61. 3. 14	62. 31. 32	63. 59. 50	65. 28. 7
	28	66. 56. 24	68. 24. 40	69. 52. 58	71. 21. 18	72. 49. 40	74. 18. 5	75. 46. 34	77. 15. 8
	29	78. 43. 45	80. 12. 27	81. 41. 16	83. 10. 10	84. 39. 10	86. 8. 17	87. 37. 31	89. 6. 54
	30	90. 36. 25	92. 6. 6	93. 35. 56	95. 5. 56	96. 36. 5	98. 6. 26	99. 36. 58	101. 7. 42
	31	102. 38. 37	104. 9. 44	105. 41. 4	107. 12. 36	108. 44. 22	110. 16. 21	111. 48. 34	113. 21. 1
	N1	114. 53. 42							

CONFIGURATIONS of the SATELLITES of JUPITER at X o'Clock at *Night*.

| | | |

Days of the Week.	Days of the Month.	*Sundays, Holidays, Terms, &c.*
W.	1	*All-Saints.*
Th.	2	*Pr. Edward born.*
F.	3	*Prs. Sophia b.* On m. of all
Sa.	4	[Souls 1 ret.
		[*Plot*, 1605.
Sun.	5	*21st Sun. aft. Tr. Powder*
M.	6	Leon^{d}. Mich^{l}. T. begins.
Tu.	7	
W.	8	*Prs. Aug. Sophia born.*
Th.	9	
F.	10	
Sa.	11	St. Martin.
		[T. div m.
Sun.	12	*22d Sun. aft. Trin.* Cam.
M.	13	Britius. On m. of St. Mart.
Tu.	14	[2 ret.
W.	15	Machutus.
Th.	16	
F.	17	Hugh Bp. of Lincoln.
Sa.	18	In 8 days of St. Mart. 3 r.
Sun.	19	*23d Sunday after Trin.*
M.	20	Edm. K. and Mart.
Tu.	21	
W.	22	Cecilia.
Th.	23	St. Clement.
F.	24	
Sa.	25	*D. of Glo. b.* Cath. In 15
		[days of St. M. 4 r.
Sun.	26	*4th Sunday after Trinity.*
M.	27	2
Tu.	28	Michaelmas Term ends.
W.	29	
Th.	30	*St. Andrew.*

Phases of the MOON.

	D. H. M.
○ Full Moon ----	4. 2. 57
☾ *Last Quarter* ---	11. 2. 38
● New Moon ----	18. 2. 34
☽ *First Quarter* ---	26. 2. 9

Other *Phenomena.*

D. H. M.	
6. 10. 16	☽ ι ♉
7. 4. 49	☽ 132 ♉
7. - -	♂ θ ♍, ✱ 47′ N.
8. 2. 12	☽ ε ♊
9. 1. 38	☽ κ ♊
10. 1. 12	☽ γ ♋
11. 11. 40	☽ η ♌
12. 20. 57	☽ ι ♌
13. - -	♀ λ ♐ ✱ 14′½ N.
13. 23. 53	☽ c ♍
16. 5. 42	☽ κ ♍
18. - -	♀ σ ♐, ✱ 59′. S.
20. 23. 26	☽ λ ♐
21. 6. 30	☉ enters ♐
21. 11. 13	☽ σ ♐
21. 19. 22	☽ ♀
24. 14. 45	☽ ε ♑
26. 20. 15	☽ 2 ad ↓ ♒
26. 20. 23	☽ 3 ad ↓ ♒
27. 20. 29	☽ 33 ♓

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. South.	Equation of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
W.	1	7. 9. 34. 32	14. 28. 40, 7	14. 41. 46	16. 14, 9	0, 3
Th.	2	7. 10. 34. 41	14. 32. 36, 9	15. 0. 44	16. 15, 2	0, 5
F.	3	7. 11. 34. 53	14. 36. 33, 9	15. 19. 27	16. 14, 7	1, 3
Sa.	4	7. 12. 35. 5	14. 40. 31, 8	15. 37. 55	16. 13, 4	2, 1
Sun.	5	7. 13. 35. 20	14. 44. 30, 5	15. 56. 7	16. 11, 3	3, 0
M.	6	7. 14. 35. 36	14. 48. 30, 1	16. 14. 4	16. 8, 3	3, 8
Tu.	7	7. 15. 35. 54	14. 52. 30, 5	16. 31. 44	16. 4, 5	4, 7
W.	8	7. 16. 36. 15	14. 56. 31, 7	16. 49. 7	15. 59, 8	5, 6
Th.	9	7. 17. 36. 38	15. 0. 33, 9	17. 6. 14	15. 54, 2	6, 4
F.	10	7. 18. 37. 2	15. 4. 36, 8	17. 23. 3	15. 47, 8	7, 3
Sa.	11	7. 19. 37. 28	15. 8. 40, 7	17. 39. 34	15. 40, 5	8, 2
Sun.	12	7. 20. 37. 56	15. 12. 45, 5	17. 55. 46	15. 32, 3	9, 0
M.	13	7. 21. 38. 27	15. 16. 51, 1	18. 11. 40	15. 23, 3	9, 9
Tu.	14	7. 22. 38. 59	15. 20. 57, 6	18. 27. 15	15. 13, 4	10, 8
W.	15	7. 23. 39. 33	15. 25. 5, 0	18. 42. 31	15. 2, 6	11, 6
Th.	16	7. 24. 40. 9	15. 29. 13, 2	18. 57. 27	14. 51, 0	12, 5
F.	17	7. 25. 40. 47	15. 33. 22, 3	19. 12. 2	14. 38, 5	13, 3
Sa.	18	7. 26. 41. 26	15. 37. 32, 1	19. 26. 16	14. 25, 2	14, 1
Sun.	19	7. 27. 42. 7	15. 41. 42, 9	19. 40. 10	14. 11, 1	15, 0
M.	20	7. 28. 42. 50	15. 45. 54, 5	19. 53. 42	13. 56, 1	15, 8
Tu.	21	7. 29. 43. 34	15. 50. 6, 8	20. 6. 52	13. 40, 3	16, 5
W.	22	8. 0. 44. 18	15. 54. 20, 0	20. 19. 40	13. 23, 8	17, 3
Th.	23	8. 1. 45. 5	15. 58. 33, 9	20. 32. 6	13. 6, 5	18, 1
F.	24	8. 2. 45. 52	16. 2. 48, 5	20. 44. 8	12. 48, 4	18, 8
Sa.	25	8. 3. 46. 40	16. 7. 3, 9	20. 55. 47	12. 29, 6	19, 5
Sun.	26	8. 4. 47. 29	16. 11. 20, 0	21. 7. 2	12. 10, 1	20, 2
M.	27	8. 5. 48. 19	16. 15. 36, 9	21. 17. 54	11. 49, 9	20, 9
Tu.	28	8. 6. 49. 9	16. 19. 54, 3	21. 28. 21	11. 29, 0	21, 5
W.	29	8. 7. 50. 1	16. 24. 12, 5	21. 38. 24	11. 7, 5	22, 2
Th.	30	8. 8. 50. 53	16. 28. 31, 3	21. 48. 1	10. 45, 3	

Days	Time of ☉'s Semidiam. pass^s Merid.	THE SUN'S Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 6, 9	16. 11, 2	2. 30, 4	9. 996209	2. 15. 6
7	1. 7, 6	16. 12, 6	2. 30, 8	9. 995575	2. 14. 47
13	1. 8, 3	16. 13, 9	2. 31, 3	9. 995004	2. 14. 28
19	1. 9, 0	16. 15, 1	2. 31, 7	9. 994476	2. 14. 9
25	1. 9, 7	16. 16, 2	2. 32, 0	9. 993986	2. 13. 50

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. *Emersions.* Days.	H. M. S.	II. Satellite. *Emersions.* Days.	H. M. S.	III. Satellite. Days.	H. M. S.
* 1	13. 58. 34	2	0. 58. 12	1	0. 28. 13 Im.
* 3	8. 27. 20	* 5	14. 16. 36	1	2. 39. 27 E.
5	2. 56. 6	9	3. 34. 46	8	4. 30. 21 Im.
6	21. 24. 49	12	16. 52. 46	* 8	6. 40. 31 E.
8	15. 53. 32	*16	6. 10. 33	*15	8. 31. 54 Im.
*10	10. 22. 10	19	19. 28. 11	*15	10. 40. 58 E.
12	4. 50. 49	*23	8. 45. 38	*22	12. 32. 52 Im.
13	23. 19. 22	26	22. 2. 53	22	14. 40. 50 E.
15	17. 47. 56	*30	11. 19. 56	29	16. 33. 15 Im.
*17	12. 16. 27			29	18. 40. 7 E.
*19	6. 44. 57				
21	1. 13. 22				
22	19. 41. 48				
24	14. 10. 8				
*26	8. 38. 27				
28	3. 6. 47				
29	21. 35. 3				

IV. Satellite. Conj.	
4	19. 11 Sup.
13	2. 56 Inf.
*21	10. 25 Sup
29	18. 35 Inf.

Days	THE PLANETS											
	Heliocentric				Geocentric				Declin.		Passage Merid.	
	Long.		Lat.		Long.		Lat.					
	S.	D. M.	D.	M.	S.	D. M.	D.	M.	D.	M.	H.	M.
	☿				*MERCURY.*							
1	4.	13. 54	7.	0 N	6.	21. 30	2.	11 N	6.	21 S	22.	55
4	4.	29. 17	6.	49	6.	25. 33	2.	6	7.	56	22.	59
7	5.	13. 15	6.	14	6.	29. 58	1.	54	9.	42	23.	4
10	5.	25. 55	5.	23	7.	4. 34	1.	39	11.	31	23.	9
13	6.	7. 29	4.	22	7.	9. 17	1.	21	13.	20	23.	14
16	6.	18. 8	3.	17	7.	14. 2	1.	1	15.	6	23.	20
19	6.	28. 3	2.	10	7.	18. 48	0.	41	16.	47	23.	26
22	7.	7. 23	1.	3 N	7.	23. 33	0.	20 N	18.	22	23.	33
25	7.	16. 17	0.	2 S	7.	28. 18	0.	1 S	19.	49	23.	39
28	7.	24. 52	1.	5	8.	3. 2	0.	21	21.	8	23.	46
30	8.	0. 28	1.	46	8.	6. 10	0.	34	21.	55	23.	50
	♀				*VENUS.*							
1	10.	19. 14	3.	3 S	8.	19. 5	1.	58 S	24.	59 S	2.	43
7	10.	28. 44	3.	15	8.	26. 15	2.	11	25.	36	2.	51
13	11.	8. 14	3.	22	9.	3. 22	2.	20	25.	46	2.	58
19	11.	17. 45	3.	23	9.	10. 25	2.	27	25.	30	3.	4
25	11.	27. 17	3.	19	9.	17. 27	2.	30	24.	48	3.	10
	♂				*MARS.*							
1	5.	24. 18	1.	30 N	6.	10. 59	1.	0 N	3.	26 S	22.	12
7	5.	26. 58	1.	26	6.	14. 50	0.	59	4.	57	22.	2
13	5.	29. 39	1.	23	6.	18. 42	0.	57	6.	27	21.	52
19	6.	2. 20	1.	20	6.	22. 34	0.	56	7.	56	21.	41
25	6.	5. 2	1.	16	6.	26. 26	0.	54	9.	23	21.	31
	♃				*JUPITER.*							
1	0.	17. 9	1.	18 S	0.	11. 47	1.	36 S	3.	12 N	10.	15
11	0.	18. 4	1.	18	0.	10. 53	1.	33	2.	53	9.	32
21	0.	18. 59	1.	18	0.	10. 16	1.	31	2.	41	8.	48
	♄				*SATURN.*							
1	3.	6. 22	0.	40 S	3.	11. 58	0.	43 S	22.	13 N	16.	21
11	3.	6. 45	0.	39	3.	11. 42	0.	42	22.	15	15.	40
21	3.	7. 7	0.	38	3.	11. 17	0.	42	22.	18	14.	57
	♅				*GEORGIAN.*							
1	5.	14. 6	0.	46 N	5.	16. 36	0.	45 N	5.	59 N	20.	40
11	5.	14. 14	0.	46	5.	17. 0	0.	45	5.	50	20.	1
21	5.	14. 22	0.	46	5.	17. 20	0.	46	5.	42	19.	21

Days of the Week.	Days of the Month.	THE MOON's Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
W.	1	0. 2. 26. 30	0. 8. 42. 43	4. 55. 10 S	4. 42. 39 S
Th.	2	0. 15. 2. 55	0. 21. 27. 13	4. 26. 35	4. 6. 58
F.	3	0. 27. 55. 35	1. 4. 28. 1	3. 43. 57	3. 17. 46
Sa.	4	1. 11. 4. 22	1. 17. 44. 32	2. 48. 38	2. 16. 54
Sun.	5	1. 24. 28. 12	2. 1. 15. 14	1. 42. 56	1. 7. 13 S
M.	6	2. 8. 5. 17	2. 14. 58. 4	0. 30. 12 S	0. 7. 30 N
Tu.	7	2. 21. 53. 20	2. 28. 50. 44	0. 45. 22 N	1. 22. 47
W.	8	3. 5. 50. 2	3. 12. 50. 55	1. 59. 8	2. 33. 51
Th.	9	3. 19. 53. 11	3. 26. 56. 32	3. 6. 21	3. 36. 5
F.	10	4. 4. 0. 46	4. 11. 5. 38	4. 2. 36	4. 25. 27
Sa.	11	4. 18. 10. 56	4. 25. 16. 24	4. 44. 17	4. 58. 45
Sun.	12	5. 2. 21. 49	5. 9. 26. 51	5. 8. 40	5. 13. 53
M.	13	5. 16. 31. 17	5. 23. 34. 44	5. 14. 20	5. 10. 1
Tu.	14	6. 0. 36. 54	6. 7. 37. 24	5. 1. 3	4. 47. 37
W.	15	6. 14. 35. 52	6. 21. 31. 53	4. 29. 58	4. 8. 27
Th.	16	6. 28. 25. 7	7. 5. 15. 10	3. 43. 26	3. 15. 24
F.	17	7. 12. 1. 44	7. 18. 44. 33	2. 44. 48	2. 12. 11
Sa.	18	7. 25. 23. 20	8. 1. 57. 59	1. 38. 4	1. 2. 56 N
Sun.	19	8. 8. 28. 20	8. 14. 54. 23	0. 27. 21 N	0. 8. 14 S
M.	20	8. 21. 16. 10	8. 27. 33. 47	0. 43. 18 S	1. 17. 29
Tu.	21	9. 3. 47. 26	9. 9. 57. 24	1. 50. 23	2. 21. 42
W.	22	9. 16. 3. 55	9. 22. 7. 28	2. 51. 4	3. 18. 17
Th.	23	9. 28. 8. 25	10. 4. 7. 15	3. 43. 5	4. 5. 20
F.	24	10. 10. 4. 30	10. 16. 0. 41	4. 24. 48	4. 41. 24
Sa.	25	10 21. 56. 25	10. 27. 52. 17	4. 54. 57	5. 5. 22
Sun.	26	11. 3. 48. 51	11. 9. 46. 45	5. 12. 33	5. 16. 24
M.	27	11. 15. 46. 35	11. 21. 48. 55	5. 16. 49	5. 13. 46
Tu.	28	11. 27. 54. 18	0. 4. 3. 15	5. 7. 11	4. 57. 1
W.	29	0. 10. 16. 15	0. 16. 33. 44	4. 43. 18	4. 26. 0
Th.	30	0. 22. 56. 4	0. 29. 23. 31	4. 5. 11	3. 41. 3

Days of the Week.	Days of the Month.	THE MOON'S Age.	Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
W.	1	14	10. 5	4. 12	9. 51	3. 32 S	0. 52 S
Th.	2	15	10. 49	15. 34	21. 22	1. 50 N	4. 33 N
F.	3	16	11. 34	27. 17	33. 19	7. 16	9. 55
Sa.	4	17	12. 22	39. 32	45. 56	12. 30	14. 57
Sun.	5	18	13. 14	52. 32	59. 22	17. 15	19. 20
M.	6	19	14. 9	66. 24	73. 40	21. 11	22. 44
Tu.	7	20	15. 8	81. 7	88. 44	23. 58	24. 50
W.	8	21	16. 8	96. 27	104. 14	25. 19	25. 24
Th.	9	22	17. 8	112. 1	119. 45	25. 4	24. 19
F.	10	23	18. 6	127. 23	134. 52	23. 12	21. 43
Sa.	11	24	19. 1	142. 10	149. 18	19. 54	17. 48
Sun.	12	25	19. 53	156. 16	163. 2	15. 26	12. 52
M.	13	26	20. 43	169. 40	176. 10	10. 9	7. 18
Tu.	14	27	21. 31	182. 34	188. 54	4. 21 N	1. 23 N
W.	15	28	22. 18	195. 11	201. 27	1. 37 S	4. 34 S
Th.	16	29	23. 7	207. 44	214. 4	7. 27	10. 13
F.	17	30	23. 56	220. 27	226. 54	12. 51	15. 18
Sa.	18	1	0	233. 27	240. 5	17. 33	19. 33
Sun.	19	2	0. 47	246. 48	253. 36	21. 17	22. 45
M.	20	3	1. 39	260. 27	267. 19	23. 54	24. 44
Tu.	21	4	2. 32	274. 11	281. 2	25. 15	25. 27
W.	22	5	3. 24	287. 48	294. 30	25. 20	24. 54
Th.	23	6	4. 14	301. 4	307. 30	24. 12	23. 13
F.	24	7	5. 2	313. 48	319. 58	21. 59	20. 32
Sa.	25	8	5. 47	325. 59	331. 53	18. 51	17. 0
Sun.	26	9	6. 30	337. 41	343. 22	14. 58	12. 47
M.	27	10	7. 12	348. 59	354. 34	10. 28	8. 3
Tu.	28	11	7. 54	0. 7	5. 41	5. 32	2. 56 S
W.	29	12	8. 36	11. 17	16. 58	0. 16 S	2. 25 N
Th.	30	13	9. 19	22. 44	28. 38	5. 8 N	7. 49

Days of the Week.	Days of the Month.	THE MOON's Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
W.	1	15. 8	15. 13	55. 33	55. 49	5106	5085
Th.	2	15. 17	15. 22	56. 6	56. 25	5063	5038
F.	3	15. 27	15. 32	56. 43	57. 2	5015	4991
Sa.	4	15. 37	15. 42	57. 20	57. 38	4968	4946
Sun.	5	15. 47	15. 51	57. 54	58. 9	4926	4907
M.	6	15. 55	15. 58	58. 23	58. 36	4890	4874
Tu.	7	16. 1	16. 4	58. 47	58. 57	4860	4848
W.	8	16. 6	16. 8	59. 4	59. 11	4839	4831
Th.	9	16. 9	16. 10	59. 16	59. 19	4824	4821
F.	10	16. 10	16. 11	59. 21	59. 22	4819	4817
Sa.	11	16. 11	16. 10	59. 22	59. 21	4817	4819
Sun.	12	16. 10	16. 9	59. 19	59. 16	4821	4824
M.	13	16. 8	16. 7	59. 12	59. 7	4830	4835
Tu.	14	16. 5	16. 2	59. 0	58. 51	4844	4855
W.	15	15. 59	15. 56	58. 41	58. 30	4867	4881
Th.	16	15. 53	15. 49	58. 18	58. 4	4896	4913
F.	17	15. 45	15. 41	57. 49	57. 33	4932	4952
Sa.	18	15. 36	15. 32	57 16	56. 59	4973	4995
Sun.	19	15. 27	15. 22	56. 41	56. 23	5018	5041
M.	20	15. 17	15. 12	56. 5	55. 48	5064	5086
Tu.	21	15. 8	15. 4	55. 31	55. 16	5108	5128
W.	22	15. 0	14. 57	55. 2	54. 50	5146	5162
Th.	23	14. 54	14. 52	54. 40	54. 32	5175	5186
F.	24	14. 50	14. 49	54. 26	54. 23	5194	5198
Sa.	25	14. 49	14. 49	54. 22	54. 23	5199	5198
Sun.	26	14. 50	14. 52	54. 27	54. 34	5193	5183
M.	27	14. 55	14. 58	54. 44	54. 55	5170	5155
Tu.	28	15. 2	15. 6	55. 9	55. 26	5137	5115
W.	29	15. 11	15. 17	55. 45	56. 5	5090	5064
Th.	30	15. 23	15. 29	56. 27	56. 50	5036	5006

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	1	64. 13. 36	62. 40. 38	61. 7. 26	59. 33. 58	58. 0. 16	56. 26. 18	54. 52. 6	53. 17. 39
	2	51. 42. 57	50. 8. 0	48. 32. 48	46. 57. 21	45. 21. 40	43. 45. 45	42. 9. 36	40. 33. 14
	3	38. 56. 39	37. 19. 49	35. 42. 49	34. 5. 37	32. 28. 15	30. 50. 40	29. 13. 1	27. 35. 15
	4	25. 57. 27	24. 19. 36	22. 41. 49	21. 4. 6	19. 26. 24			
Pollux.	4	- - -	- - -	- - -	- - -	63. 12. 38	61. 32. 1	59. 51. 11	58. 10. 7
	5	56. 28. 49	54. 47. 18	53. 5. 35	51. 23. 40	49. 41. 33	47. 59. 15	46. 16. 48	44. 34. 10
	6	42. 51. 23	41. 8. 27	39. 25. 22	37. 42. 10	35. 58. 50			
Regulus.	6	- - -	- - -	- - -	- - -	72. 2. 50	70. 19. 10	68. 35. 22	66. 51. 27
	7	65. 7. 24	63. 23. 14	61. 38. 58	59. 54. 36	58. 10. 8	56. 25. 34	54. 40. 55	52. 56. 13
	8	51. 11. 26	49. 26. 37	47. 41. 45	45. 56. 52	44. 11. 56	42. 26. 58	40. 42. 0	38. 57. 3
	9	37. 12. 7	35. 27. 13	33. 42. 22	31. 57. 35	30. 12. 53			
Spica ♍.	9	- - -	- - -	- - -	- - -	84. 12. 51	82. 27. 28	80. 42. 5	78. 56. 41
	10	77. 11. 17	75. 25. 53	73. 40. 28	71. 55. 5	70. 9. 41	68. 24. 18	66. 38. 56	64. 53. 35
	11	63. 8. 16	61. 22. 59	59. 37. 45	57. 52. 35	56. 7. 27			

Stars Names.	Days	*Noon.*	III^{h}.	VI^{h}.	IX^{h}.	*Midnight.*	XV^{h}.	XVIII^{h}.	XXI^{h}.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	8	- - -	- - -	- - -	- - -	- - -	- - -	120. 57. 7	119. 19. 0
	9	117. 40. 49	116. 2. 35	114. 24. 19	112. 46. 1	111. 7. 40	109. 29. 17	107. 50. 54	106. 12. 28
	10	104. 34. 2	102. 55. 35	101. 17. 8	99. 38. 40	98. 0. 11	96. 21. 42	94. 43. 12	93. 4. 43
	11	91. 26. 14	89. 47. 46	88. 9. 19	86. 30. 53	84. 52. 28	83. 14. 4	81. 35. 41	79. 57. 20
	12	78. 19. 0	76. 40. 43	75. 2. 28	73. 24. 15	71. 46. 4	70. 7. 55	68. 29. 50	66. 51. 48
	13	65. 13. 49	63. 35. 54	61. 58. 2	60. 20. 15	58. 42. 31	57. 4. 51	55. 27. 16	53. 49. 46
	14	52. 12. 21	50. 35. 1	48. 57. 48	47. 20. 40	45. 43. 39	44. 6. 44	42. 29. 56	40. 53. 16
	15	39. 16. 42							
Fomalhaut.	19	- - -	- - -	- - -	- - -	77. 0. 0	75. 27. 41	73. 55. 41	72. 24. 1
	20	70. 52. 40	69. 21. 39	67. 50. 59	66. 20. 40	64. 50. 41	63. 21. 3	61. 51. 48	60. 22. 56
	21	58. 54. 26	57. 26. 19	55. 58. 36	54. 31. 18	53. 4. 24			
α Pegasi.	21	- - -	- - -	- - -	- - -	72. 41. 10	71. 18. 21	69. 55. 54	68. 33. 48
	22	67. 12. 5	65. 50. 45	64. 29. 50	63. 9. 21	61. 49. 17	60. 29. 40	59. 10. 31	57. 51. 51
	23	56. 33. 40							
α Arietis.	23	97. 13. 37	95. 46. 10	94. 18. 49	92. 51. 36	91. 24. 31	89. 57. 32	88. 30. 40	87. 3. 53
	24	85. 37. 13	84. 10. 38	82. 44. 8	81. 17. 43	79. 51. 22	78. 25. 5	76. 58. 51	75. 32. 41
	25	74. 6. 34	72. 40. 29	71. 14. 26	69. 48. 25	68. 22. 26	66. 56. 28	65. 30. 31	64. 4. 35
	26	62. 38. 40	61. 12. 45	59. 46. 50	58. 20. 55	56. 55. 1	55. 29. 7	54. 3. 12	52. 37. 17
	27	51. 11. 22							
Aldebaran.	27	80. 45. 26	79. 15. 50	77. 46. 4	76. 16. 7	74. 45. 59	73. 15. 40	71. 45. 8	70. 14. 24
	28	68. 43. 28	67. 12. 18	65. 40. 55	64. 9. 17	62. 37. 25	61. 5. 17	59. 32. 52	58. 0. 12
	29	56. 27. 17	54. 54. 4	53. 20. 34	51. 46. 47	50. 12. 43	48. 38. 21	47. 3. 41	45. 28. 43
	30	43. 53. 27	42. 17. 53	40. 42. 1	39. 5. 52	37. 29. 26	35. 52. 43	34. 15. 45	32. 38. 30
	D. 1	31. 0. 59							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S	D. M. S.	D. M. S.	D. M. S.
α Aquilæ.	1	69. 48. 15	71. 4. 33	72. 21. 21	73. 38. 38	74. 56. 23	76. 14. 33	77. 33. 9	78. 52. 9
	2	80. 11. 33	81. 31. 18	82. 51. 24	84. 11. 50	85. 32. 34			
Fomalhaut.	2	- - -	- - -	- - -	- - -	51. 48. 3	53. 18. 39	54. 49. 43	56. 21. 16
	3	57. 53. 18	59. 25. 47	60. 58. 40	62. 31. 59	64. 5. 43	65. 39. 49	67. 14. 18	68. 49. 8
	4	70. 24. 20	71. 59. 53	73. 35. 44	75. 11. 54	76. 48. 23	78. 25. 8	80. 2. 9	81. 39. 26
	5	83. 16. 59	84. 54. 47	86. 32. 48	88. 11. 4	89. 49. 33			
α Arietis.	5	- - -	- - -	- - -	- - -	28. 32. 10	30. 3. 2	31. 35. 5	33. 8. 10
	6	34. 42. 15	36. 17. 15	37. 53. 2	39. 29. 34	41. 6. 49	42. 44. 34	44. 22. 50	46. 1. 35
	7	47. 40. 49	49. 20. 26	51. 0. 24	52. 40. 40	54. 21. 12			
Aldebaran.	7	- - -	- - -	- - -	- - -	22. 54. 20	24. 37. 4	26. 20. 8	28. 3. 31
	8	29. 47. 10	31. 31. 5	33. 15. 13	34. 59. 32	36. 44. 4	38. 28. 43	40. 13. 28	41. 58. 22
	9	43. 43. 23	45. 28. 28	47. 13. 39	48. 58. 53	50. 44. 13	52. 29. 36	54. 15. 1	56. 0. 30
	10	57. 46. 1	59. 31. 34	61. 17. 8	63. 2. 45	64. 48. 22	66. 34. 0	68. 19. 39	70. 5. 18
	11	71. 50. 58							
Pollux.	11	27. 40. 32	29. 25. 44	31. 11. 0	32. 56. 19	34. 41. 42	36. 27. 7	38. 12. 33	39. 58. 1
	12	41. 43. 29	43. 28. 56	45. 14. 22	46. 59. 47	48. 45. 12	50. 30. 35	52. 15. 57	54. 1. 17
	13	55. 46. 36							

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	13	20. 3. 10	21. 46. 6	23. 29. 16	25. 12. 39	26. 56. 12	28. 39. 54	30. 23. 42	32. 7. 33
	14	33. 51. 30	35. 35. 24	37. 19. 16	39. 3. 9	40. 47. 0	42. 30. 47	44. 14. 30	45. 58. 9
	15	47. 41. 43	49. 25. 11	51. 8. 33	52. 51. 48	54. 34. 56	56. 17. 56	58. 0. 48	59. 43. 31
	16	61. 26. 6	63. 8. 31	64. 50. 46	66. 32. 50	68. 14. 44			
The Sun.	21	- - -	- - -	- - -	- - -	39. 46. 59	41. 11. 31	42. 35. 50	43. 59. 56
	22	45. 23. 49	46. 47. 30	48. 10. 59	49. 34. 17	50. 57. 25	52. 20. 21	53. 43. 7	55. 5. 43
	23	56. 28. 9	57. 50. 26	59. 12. 35	60. 34. 35	61. 56. 28	63. 18. 14	64. 39. 53	66. 1. 27
	24	67. 22. 54	68. 44. 16	70. 5. 34	71. 26. 49	72. 47. 59	74. 9. 7	75. 30. 14	76. 51. 20
	25	78. 12. 24	79. 33. 28	80. 54. 32	82. 15. 38	83. 36. 44	84. 57. 52	86. 19. 4	87. 40. 19
	26	89. 1. 37	90. 23. 0	91. 44. 28	93. 6. 3	94. 27. 43	95. 49. 31	97. 11. 26	98. 33. 30
	27	99. 55. 42	101. 18. 4	102. 40. 36	104. 3. 19	105. 26. 13	106. 49. 19	108. 12. 37	109. 36. 8
	28	110. 59. 52	112. 23. 50	113. 48. 2	115. 12. 30	116. 37. 12	118. 2. 10	119. 27. 26	120. 52. 59
	29	122. 18. 49							
Antares.	26	86. 29. 36	87. 58. 12	89. 26. 54	90. 55. 41	92. 24. 35	93. 53. 36	95. 22. 44	96. 52. 1
	27	98. 21. 26	99. 51. 1	101. 20. 45	102. 50. 40	104. 20. 45	105. 51. 1	107. 21. 30	108. 52. 12
	28	110. 23. 6							
α Aquilæ.	28	66. 11. 31	67. 25. 16	68. 39. 33	69. 54. 23	71. 9. 43	72. 25. 34	73. 41. 53	74. 58. 41
	29	76. 15. 56	77. 33. 38	78. 51. 45	80. 10. 16	81. 29. 12			
Fomalhaut.	29	- - -	- - -	- - -	- - -	47. 13. 30	48. 41. 46	50. 10. 36	51. 40. 3
	30	53. 10. 3	54. 40. 37	56. 11. 43	57. 43. 21	59. 15. 31	60. 48. 11	62. 21. 20	63. 54. 58
	D 1	65. 29. 5							

CONFIGURATIONS of the SATELLITES of JUPITER

at IX o'Clock in the Evening.

| | | |

Days of the Week.	Days of the Month.	*Sundays, Holidays, Terms, &c.*
F.	1	
Sa.	2	
Sun.	3	*Advent-Sunday.*
M.	4	
Tu.	5	
W.	6	Nicholas.
Th.	7	
F.	8	Conception of V. Mary.
Sa.	9	
Sun.	10	*2d Sunday in Advent.*
M.	11	
Tu.	12	
W.	13	Lucy.
Th.	14	
F.	15	
Sa.	16	O Sap. Camb. T. ends.
Sun.	17	*3d Sunday in Advent.*
M.	18	Oxford Term ends.
Tu.	19	
W.	20	
Th.	21	*St. Thomas.*
F.	22	
Sa.	23	
Sun.	24	*4th Sunday in Advent.*
M.	25	*Christmas-Day.*
Tu.	26	*St. Stephen.*
W.	27	*St. John.*
Th.	28	*Innocents.*
F.	29	
Sa.	30	[Silvester.
Sun.	31	*Sunday after Christmas.*

Phases of the MOON.

	D. H. M.
○ Full Moon - - - - -	3. 16. 26
☾ *Last Quarter* - - - -	10. 10. 11
● New Moon - - - - -	17. 18. 39
☽ *First Quarter* - - - -	25. 22. 46

Other *Phenomena.*

D. H. M.	
3 - -	☽ eclipsed, visible.
3. 18. 47	☽ ∘ ♉
4. 12. 53	☽ 132 ♉
5 - -	♃ Stationary.
5. 9. 39	☽ ∘ ♊
6. 8. 23	☽ ∗ ♊
6. - -	♂ λ ♍, ✱ 19′ S.
7. 7. 20	☽ γ ♋
8. 17. 7	☽ ∘ ♌
10. 2. 9	☽ ∘ ♌
11. 5. 14	☽ c ♍
13. 11. 59	☽ ∗ ♍
15. 1. 18	☽ 4 ad ζ ♎
17. - -	☉ eclipsed, invisible.
19. - -	♂ α ♎, ✱ 23′ S.
20. 18. 53	☉ enters ♑
21. 22. 23	☽ ∘ ♑
22. - -	♅ Stationary.
22. - -	♀ γ ♑, ✱ 48′ S.
24. 4. 4	☽ 2 ad ↓ ♒
24. 4. 12	☽ 3 ad ↓ ♒
24. - -	♀ δ ♑, ✱ 55′ S.
25. 4. 29 I.	of 33 ♓, ✱ 7′ N. of ☽'s C
25. 5. 46 E.	1′ ½ N.
29. - -	♀ ι ♒, ✱ 46′ S.
31. 5. 8	☽ ∘ ♉
31. 23. 7	☽ 132 ♉

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. South.	Equation of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
F.	1	8. 9. 51. 47	16. 32. 50, 7	21. 57. 14	10. 22, 5	23, 4
Sa.	2	8. 10. 52. 41	16. 37. 10, 8	22. 6. 2	9. 59, 1	24, 1
Sun.	3	8. 11. 53. 36	16. 41. 31, 4	22. 14. 23	9. 35, 0	24, 6
M.	4	8. 12. 54. 32	16. 45. 52, 6	22. 22. 19	9. 10, 4	25, 1
Tu.	5	8. 13. 55. 30	16. 50. 14, 3	22. 29. 49	8. 45, 3	25, 7
W.	6	8. 14. 56. 28	16. 54. 36, 7	22. 36. 53	8. 19, 6	26, 2
Th.	7	8. 15. 57. 27	16. 58. 59, 5	22. 43. 29	7. 53, 4	26, 7
F.	8	8. 16. 58. 27	17. 3. 22, 9	22. 49. 39	7. 26, 7	27, 1
Sa.	9	8. 17. 59. 29	17. 7. 46, 6	22. 55. 22	6. 59, 6	27, 6
Sun.	10	8. 19. 0. 32	17. 12. 10, 8	23. 0. 38	6. 32, 0	28, 0
M.	11	8. 20. 1. 35	17. 16. 35, 5	23. 5. 26	6. 4, 0	28, 4
Tu.	12	8. 21. 2. 41	17. 21. 0, 5	23. 9. 47	5. 35, 6	28, 7
W.	13	8. 22. 3. 47	17. 25. 25, 9	23. 13. 41	5. 6, 9	29, 1
Th.	14	8. 23. 4. 54	17. 29. 51, 5	23. 17. 6	4. 37, 8	29, 3
F.	15	8. 24. 6. 2	17. 34. 17, 5	23. 20. 4	4. 8, 5	29, 5
Sa.	16	8. 25. 7. 11	17. 38. 43, 7	23. 22. 33	3. 39, 0	29, 8
Sun.	17	8. 26. 8. 20	17. 43. 10, 1	23. 24. 34	3. 9, 2	29, 9
M.	18	8. 27. 9. 30	17. 47. 36, 6	23. 26. 7	2. 39, 3	30, 1
Tu.	19	8. 28. 10. 41	17. 52. 3, 3	23. 27. 12	2. 9, 2	30, 1
W.	20	8. 29. 11. 51	17. 56. 30, 1	23. 27. 48	1. 39, 1	30, 1
Th.	21	9. 0. 13. 2	18. 0. 56, 9	23. 27. 56	1. 9, 0	30, 2
F.	22	9. 1. 14. 14	18. 5. 23, 7	23. 27. 36	0. 38, 8	30, 1
Sa.	23	9. 2. 15. 25	18. 9. 50, 4	23. 26. 48	0. 8, 7	30, 1
Sun.	24	9. 3. 16. 36	18. 14. 17, 1	23. 25. 31	*Ad:* 21, 4	29, 9
M.	25	9. 4. 17. 47	18. 18. 43, 7	23. 23. 46	0. 51, 3	29, 8
Tu.	26	9. 5. 18. 58	18. 23. 10, 2	23. 21. 32	1. 21, 1	29, 7
W.	27	9. 6. 20. 9	18. 27. 36, 4	23. 18. 51	1. 50, 8	29, 4
Th.	28	9. 7. 21. 20	18. 32. 2, 5	23. 15. 41	2. 20, 2	29, 2
F.	29	9. 8. 22. 30	18. 36. 28, 3	23. 12. 3	2. 49, 4	28, 9
Sa.	30	9. 9. 23. 40	18. 40. 53, 8	23. 7. 58	3. 18, 3	28, 5
Sun.	31	9. 10. 24. 49	18. 45. 19, 0	23. 3. 25	3. 46, 8	

Days	Time of ☉'s Semidiam. passs Merid.	THE SUN's Semi-diameter	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 10, 2	16. 17, 1	2. 32, 2	9. 993557	2. 13. 31
7	1. 10, 7	16, 17, 9	2. 32, 5	9. 993219	2. 13. 12
13	1. 11, 1	16. 18, 5	2. 32, 7	9. 992971	2. 12. 53
19	1. 11, 1	16. 19, 0	2. 32, 8	9. 992793	2. 12. 33
25	1. 11, 1	16. 19, 2	2. 32, 9	9. 992669	2. 12. 14

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Emersions.		*Emersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	16. 3. 19	4	0. 36. 51	6	20. 33. 7 Im.
*3	10. 31. 33	7	13. 53. 36	6	22. 39. 0 E.
*5	4. 59. 45	11	3. 10. 10	14	0. 32. 34 Im.
6	23. 27. 56	14	16. 26. 42	14	2. 37. 28 E.
8	17. 56. 7	*18	5. 43. 8	21	4. 31. 56 Im.
*10	12. 24. 13	21	18. 59. 31	*21	6. 35. 50 E.
*12	6. 52. 22	*25	8. 15. 54	*28	8. 31. 20 Im.
14	1. 20. 26	28	21. 32. 18	*28	10. 34. 14 E.
15	19. 48. 34				
17	14. 16. 36				
*19	8. 44. 45				
21	3. 12. 50			IV. Satellite. Conj.	
22	21. 40. 56				
24	16. 9. 0			8	2. 38 Sup.
*26	10. 37. 4			*16	11. 17 Inf.
*28	5. 5. 15			24	19. 55 Sup.
29	23. 33. 23				
31	18. 1. 32				

Days	THE PLANETS					
	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
	☿		*MERCURY.*		Sup. ♂ 4d. 19½h.	
1	8. 3. 14	2. 5 S	8. 7. 44	0. 40 S	22. 17 S	23. 53
4	8. 11. 30	3. 2	8. 12. 27	0. 58	23. 17	♂
7	8. 19. 44	3. 54	8. 17. 10	1. 15	24. 6	0. 5
10	8. 28. 3	4. 42	8. 21. 54	1. 31	24. 44	0. 12
13	9. 6. 32	5. 25	8. 26. 38	1. 44	25. 10	0. 20
16	9. 15. 18	6. 2	9. 1. 23	1. 55	25. 23	0. 27
19	9. 24. 25	6. 31	9. 6. 10	2. 3	25. 23	0. 35
22	10. 4. 3	6. 51	9. 10. 58	2. 9	25. 9	0. 43
25	10. 14. 18	7. 0	9. 15. 47	2. 11	24. 42	0. 51
28	10. 25. 19	6. 54	9. 20. 35	2. 8	24. 0	0. 58
31	11. 7. 18	6. 31	9. 25. 19	2. 1	23. 5	1. 5
	♀		*VENUS.*			
1	0. 6. 50	3. 9 S	9. 24. 25	2. 29 S	23. 42 S	3. 14
7	0. 16. 23	2. 53	10. 1. 17	2. 23	22. 13	3. 17
13	0. 25. 58	2. 33	10. 8. 3	2. 13	20. 25	3. 19
19	1. 5. 34	2. 9	10. 14. 44	1. 58	18. 19	3. 19
25	1. 15. 10	1. 41	10. 21. 15	1. 37	15. 58	3. 18
	♂		*MARS.*			
1	6. 7. 44	1. 12 N	7. 0. 19	0. 52 N	10. 47 S	21. 20
7	6. 10. 28	1. 8	7. 4. 11	0. 50	12. 9	21. 8
13	6. 13. 13	1. 4	7. 8. 5	0. 47	13. 28	20. 57
19	6. 15. 58	0. 59	7. 11. 58	0. 45	14. 44	20. 45
25	6. 18. 45	0. 54	7. 15. 52	0. 42	15. 56	20. 34
	♃		*JUPITER.*		□ 31d. 20h.	
1	0. 19. 54	1. 18 S	0. 10. 0	1. 28 S	2. 37 N	8. 5
11	0. 20. 49	1. 18	0. 10. 2	1. 25	2. 41	7. 21
21	0. 21. 44	1. 17	0. 10. 28	1. 22	2. 54	6. 38
	♄		*SATURN.*		☍ 29d. 4h.	
1	3. 7. 30	0. 37 S	3. 10. 42	0. 41 S	22. 21 N	14. 11
11	3. 7. 52	0. 37	3. 10. 0	0. 41	22. 25	13. 24
21	3. 8. 15	0. 36	3. 9. 13	0. 40	22. 29	12. 36
	♅		*GEORGIAN.*		□ 8d. 17h.	
1	5. 14. 30	0. 46 N	5. 17. 34	0. 46 N	5. 37 N	18. 39
11	5. 14. 38	0. 46	5. 17. 44	0. 46	5. 34	17. 56
21	5. 14. 46	0. 46	5. 17. 47	0. 47	5. 33	17. 12

Days of the Week.	Days of the Month.	THE MOON'S Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
F.	1	1. 5. 56. 15	1. 12. 34. 25	3. 13. 41 S	2. 43. 18 S
Sa.	2	1. 19. 17. 58	1. 26. 6. 52	2. 10. 16	1. 34. 56
Sun.	3	2. 3. 0. 49	2. 9. 59. 30	0. 57. 46 S	0. 19. 19 S
M.	4	2. 17. 2. 28	2. 24. 9. 15	0. 19. 50 N	0. 59. 2 N
Tu.	5	3. 1. 19. 12	3. 8. 31. 43	1. 37. 34	2. 14. 46
W.	6	3. 15. 46. 1	3. 23. 1. 28	2. 49. 57	3. 22. 28
Th.	7	4. 0. 17. 18	4. 7. 32. 54	3. 51. 45	4. 17. 16
F.	8	4. 14. 47. 36	4. 22. 0. 48	4. 38. 37	4. 55. 26
Sa.	9	4. 29. 12. 5	5. 6. 21. 1	5. 7. 33	5. 14. 50
Sun.	10	5. 13. 27. 14	5. 20. 30. 31	5. 17. 13	5. 14. 50
M.	11	5. 27. 30. 39	6. 4. 27. 27	5. 7. 46	4. 56. 14
Tu.	12	6. 11. 20. 53	6. 18. 10. 55	4. 40. 32	4. 20. 56
W.	13	6. 24. 57. 30	7. 1. 40. 41	3. 57. 52	3. 31. 42
Th.	14	7. 8. 20. 29	7. 14. 56. 55	3. 2. 50	2. 31. 45
F.	15	7. 21. 30. 3	7. 27. 59. 57	1. 58. 56	1. 24. 52
Sa.	16	8. 4. 26. 39	8. 10. 50. 13	0. 49. 58 N	0. 14. 45 N
Sun.	17	8. 17. 10. 42	8. 23. 28. 9	0. 20. 22 S	0. 54. 56 S
M.	18	8. 29. 42. 40	9. 5. 54. 20	1. 28. 33	2. 0. 50
Tu.	19	9. 12. 3. 16	9. 18. 9. 36	2. 31. 27	3. 0. 5
W.	20	9. 24. 13. 32	10. 0. 15. 16	3. 26. 29	3. 50. 23
Th.	21	10. 6. 15. 4	10. 12. 13. 14	4. 11. 37	4. 29. 58
F.	22	10. 18. 10. 7	10. 24. 6. 6	4. 45. 21	4. 57. 36
Sa.	23	11. 0. 1. 36	11. 5. 57. 7	5. 6. 40	5. 12. 27
Sun.	24	11. 11. 53. 8	11. 17. 50. 11	5. 14. 55	5. 14. 0
M.	25	11. 23. 48. 51	11. 29. 49. 39	5. 9. 42	5. 1. 59
Tu.	26	0. 5. 53. 15	0. 12. 0. 12	4. 50. 51	4. 36. 19
W.	27	0. 18. 11. 5	0. 24. 26. 28	4. 18. 29	3. 57. 21
Th.	28	1. 0. 46. 52	1. 7. 12. 50	3. 33. 3	3. 5. 42
F.	29	1. 13. 44. 46	1. 20. 23. 0	2. 35. 31	2. 2. 49
Sa.	30	1. 27. 7. 45	2. 3. 59. 11	1. 27. 52	0. 51. 6 S
Sun.	31	2. 10. 57. 13	2. 18. 1. 44	0. 13. 0	0. 25. 49 N

Days of the Week.	Days of the Month.	THE MOON'S Age.	Passage Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
F.	1	14	10. 5	34. 42	40. 58	10. 28 N	13. 2 N
Sa.	2	15	10. 55	47. 27	54. 11	15. 29	17. 46
Sun.	3	16	11. 49	61. 10	68. 24	19. 50	21. 39
M.	4	17	12. 48	75. 53	83. 35	23. 10	24. 19
Tu.	5	18	13. 50	91. 27	99. 27	25. 5	25. 26
W.	6	19	14. 52	107. 29	115. 29	25. 21	24. 49
Th.	7	20	15. 52	123. 23	131. 9	23. 53	22. 33
F.	8	21	16. 49	138. 43	146. 4	20. 51	18. 50
Sa.	9	22	17. 42	153. 12	160. 7	16. 34	14. 4
Sun.	10	23	18. 32	166. 49	173. 22	11. 23	8. 35
M.	11	24	19. 19	179. 46	186. 3	5. 42 N	2. 45 N
Tu.	12	25	20. 6	192. 16	198. 26	0. 12 S	3. 7 S
W.	13	26	20. 52	204. 35	210. 45	5. 59	8. 46
Th.	14	27	21. 40	216. 58	223. 15	11. 25	13. 55
F.	15	28	22. 29	229. 37	236. 4	16. 15	18. 21
Sa.	16	29	23. 20	242. 38	249. 17	20. 14	21. 51
Sun.	17	1	☌	256. 2	262. 50	23. 11	24. 13
M.	18	2	0. 11	269. 41	276. 32	24. 56	25. 21
Tu.	19	3	1. 3	283. 21	290. 7	25. 26	25. 12
W.	20	4	1. 54	296. 48	303. 21	24. 40	23. 52
Th.	21	5	2. 43	309. 46	316. 3	22. 48	21. 28
F.	22	6	3. 29	322. 10	328. 9	19. 55	18. 10
Sa.	23	7	4. 13	334. 0	339. 43	16. 15	14. 10
Sun.	24	8	4. 55	345. 20	350. 53	11. 57	9. 38
M.	25	9	5. 36	356. 23	1. 51	7. 12	4. 41 S
Tu.	26	10	6. 17	7. 19	12. 50	2. 7 S	0. 31 N
W.	27	11	6. 58	18. 25	24. 5	3. 9 N	5. 48
Th.	28	12	7. 42	29. 54	35. 53	8. 26	11. 1
F.	29	13	8. 28	42. 5	48. 30	13. 30	15. 53
Sa.	30	14	9. 20	55. 11	62. 9	18. 7	20. 8
Sun.	31	15	10. 16	69. 25	76. 57	21. 54	23. 21

Days of the Week.	Days of the Month.	The Moon's Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*	*Noon.*	*Midn.*
		M. S.	M. S.	M. S.	M. S.		
F.	1	15.35	15.42	57.13	57.37	4977	4947
Sa.	2	15.48	15.54	58. 0	58.22	4918	4891
Sun.	3	16. 0	16. 5	58.43	59. 3	4865	4841
M.	4	16.10	16.14	59.20	59.35	4820	4801
Tu.	5	16.17	16.20	59.46	59.55	4788	4777
W.	6	16.21	16.22	60. 0	60. 3	4771	4768
Th.	7	16.22	16.21	60. 3	60. 1	4768	4770
F.	8	16.20	16.18	59.56	59.49	4776	4784
Sa.	9	16.16	16.13	59.40	59.29	4795	4809
Sun.	10	16.10	16. 6	59.18	59. 5	4822	4838
M.	11	16. 2	15.59	58.52	58.39	4854	4870
Tu.	12	15.55	15.51	58.25	58.11	4887	4905
W.	13	15.47	15.43	57.56	57.41	4923	4942
Th.	14	15.39	15.35	57.26	57.11	4961	4980
F.	15	15.31	15.27	56.56	56.42	4999	5017
Sa.	16	15.23	15.19	56.27	56.13	5036	5054
Sun.	17	15.15	15.11	55.58	55.44	5073	5091
M.	18	15. 7	15. 4	55.30	55.17	5110	5127
Tu.	19	15. 0	14.57	55. 4	54.53	5144	5158
W.	20	14.55	14.52	54.43	54.34	5171	5183
Th.	21	14.50	14.48	54.26	54.20	5194	5202
F.	22	14.47	14.47	54.16	54.14	5207	5210
Sa.	23	14.47	14.48	54.14	54.17	5210	5206
Sun.	24	14.49	14.51	54.21	54.28	5201	5191
M.	25	14.53	14.57	54.38	54.50	5178	5162
Tu.	26	15. 1	15. 5	55. 5	55.22	5142	5120
W.	27	15.11	15.17	55.42	56. 4	5094	5065
Th.	28	15.23	15.30	56.28	56.53	5035	5003
F.	29	15.37	15.45	57.20	57.48	4968	4933
Sa.	30	15.53	16. 0	58.16	58.43	4898	4865
Sun.	31	16. 7	16.14	59.10	59.35	4832	4801

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	1	75. 1. 7	73. 22. 9	71. 42. 50	70. 3. 10	68. 23. 8	66. 42. 45	65. 2. 1	63. 20. 56
	2	61. 39. 30	59. 57. 43	58. 15. 36	56. 33. 9	54. 50. 22	53. 7. 16	51. 23. 51	49. 40. 8
	3	47. 56. 6							
Regulus.	3	84. 0. 53	82. 16. 34	80. 31. 57	78. 47. 4	77. 1. 53	75. 16. 26	73. 30. 44	71. 44. 48
	4	69. 58. 37	68. 12. 11	66. 25. 34	64. 38. 44	62. 51. 43	61. 4. 31	59. 17. 10	57. 29. 41
	5	55. 42. 3	53. 54. 17	52. 6. 26	50. 18. 29	48. 30. 28	46. 42. 23	44. 54. 17	43. 6. 9
	6	41. 18. 1	39. 29. 52	37. 41. 47	35. 53. 46	34. 5. 49	32. 17. 56	30. 30. 15	28. 42. 44
	7	26. 55. 27	25. 8. 26	23. 21. 45	21. 35. 24	19. 49. 27			
Spica ♍.	7	- - -	- - -	- - -	- - -	73. 41. 3	71. 53. 7	70. 5. 18	68. 17. 37
	8	66. 30. 3	64. 42. 37	62. 55. 20	61. 8. 13	59. 21. 15	57. 34. 27	55. 47. 50	54. 1. 24
	9	52. 15. 10	50. 29. 8	48. 43. 20	46. 57. 46	45. 12. 26	43. 27. 19	41. 42. 30	39. 57. 57
	10	38. 13. 42	36. 29. 46	34. 46. 8	33. 2. 52	31. 19. 57			
The Sun.	8	122. 3. 45	120. 23. 9	118. 42. 40	117. 2. 20	115. 22. 7	113. 42. 2	112. 2. 7	110. 22. 20
	9	108. 42. 43	107. 3. 15	105. 23. 58	103. 44. 50	102. 5. 53	100. 27. 7	98. 48. 31	97. 10. 7
	10	95. 31. 53	93. 53. 50	92. 15. 58	90. 38. 17	89. 0. 47	87. 23. 29	85. 46. 23	84. 9. 28
	11	82. 32. 45	80. 56. 14	79. 19. 54	77. 43. 46	76. 7. 50	74. 32. 6	72. 56. 33	71. 21. 12
	12	69. 46. 2	68. 11. 3	66. 36. 16	65. 1. 40	63. 27. 16	61. 53. 4	60. 19. 4	58. 45. 15
	13	57. 11. 37	55. 38. 10	54. 4. 54	52. 31. 49	50. 58. 56	49. 26. 15	47. 53. 46	46. 21. 27
	14	44. 49. 20	43. 17. 24	41. 45. 40	40. 14. 6	38. 42. 44			

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	19	- - -	- - -	- - -	- - -	106. 56. 4	105. 27. 22	103. 58. 47	102. 30. 20
	20	101. 2. 1	99. 33. 50	98. 5. 46	96. 37. 50	95. 10. 1	93. 42. 20	92. 14. 46	90. 47. 19
	21	89. 20. 0	87. 52. 48	86. 25. 43	84. 58. 45	83. 31. 54	82. 5. 9	80. 38. 30	79. 11. 58
	22	77. 45. 31	76. 19. 10	74. 52. 55	73. 26. 45	72. 0. 41	70. 34. 42	69. 8. 47	67. 42. 57
	23	66. 17. 12	64. 51. 30	63. 25. 52	62. 0. 19	60. 34. 49	59. 9. 23	57. 44. 0	56. 18. 42
	24	54. 53. 27	53. 28. 16	52. 3. 10	50. 38. 7	49. 13. 9			
Aldebaran.	24	- - -	- - -	- - -	- - -	78. 43. 1	77. 14. 13	75. 45. 19	74. 16. 18
	25	72. 47. 10	71. 17. 54	69. 48. 30	68. 18. 55	66. 49. 12	65. 19. 17	63. 49. 11	62. 18. 54
	26	60. 48. 25	59. 17. 44	57. 46. 48	56. 15. 40	54. 44. 18	53. 12. 41	51. 40. 49	50. 8. 41
	27	48. 36. 18	47. 3. 38	45. 30. 42	43. 57. 29	42. 24. 0	40. 50. 12	39. 16. 8	37. 41. 46
	28	36. 7. 7	34. 32. 9	32. 56. 55	31. 21. 24	29. 45. 38	28. 9. 37	26. 33. 24	24. 56. 58
	29	23. 20. 18							
Pollux.	29	67. 12. 36	65. 33. 38	63. 54. 16	62. 14. 29	60. 34. 17	58. 53. 40	57. 12. 38	55. 31. 11
	30	53. 49. 18	52. 6. 59	50. 24. 16	48. 41. 8	46. 57. 36	45. 13. 39	43. 29. 20	41. 44. 37
	31	39. 59. 31	38. 14. 1	36. 28. 11	34. 42. 1	32. 55. 30	31. 8. 41	29. 21. 36	27. 34. 15
	J. 1	25. 46. 38							

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

Stars Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Fomalhaut.	1	65. 29. 4	67. 3. 40	68. 38. 43	70. 14. 12	71. 50. 7	73. 26. 28	75. 3. 13	76. 40. 22
	2	78. 17. 56	79. 55. 54	81. 34. 14	83. 12. 55	84. 51. 59	86. 31. 23	88. 11. 6	89. 51. 9
	3	91. 31. 30							
α Arietis.	3	30. 5. 54	31. 39. 41	33. 14. 36	34. 50. 36	36. 27. 35	38. 5. 31	39. 44. 15	41. 23. 45
	4	43. 4. 1	44. 44. 50	46. 26. 12	48. 8. 6	49. 50. 31	51. 33. 22	53. 16. 36	55. 0. 9
	5	56. 44. 3							
Aldebaran.	5	25. 20. 29	27. 6. 49	28. 53. 27	30. 40. 22	32. 27. 32	34. 14. 57	36. 2. 32	37. 50. 19
	6	39. 38. 15	41. 26. 18	43. 14. 25	45. 2. 38	46. 50. 55	48. 39. 13	50. 27. 33	52. 15. 52
	7	54. 4. 13	55. 52. 32	57. 40. 49	59. 29. 3	61. 17. 15	63. 5. 23	64. 53. 25	66. 41. 23
	8	68. 29. 15	70. 17. 0	72. 4. 38	73. 52. 9	75. 39. 32			
Pollux.	8	- - -	- - -	- - -	- - -	31. 27. 34	33. 14. 34	35. 1. 28	36. 48. 16
	9	38. 34. 57	40. 21. 31	42. 7. 57	43. 54. 15	45. 40. 25	47. 26. 25	49. 12. 16	50. 57. 57
	10	52. 43. 29	54. 28. 50	56. 14. 1	57. 59. 0	59. 43. 49			
Regulus.	10	- - -	- - -	- - -	- - -	23. 56. 8	25. 39. 10	27. 22. 9	29. 5. 7
	11	30. 48. 4	32. 30. 57	34. 13. 45	35. 56. 28	37. 39. 6	39. 21. 35	41. 3. 56	42. 46. 10
	12	44. 28. 15	46. 10. 11	47. 51. 58	49. 33. 36	51. 15. 4	52. 56. 22	54. 37. 29	56. 18. 27
	13	57. 59. 15	59. 39. 52	61. 20. 20	63. 0. 36	64. 40. 43	66. 20. 39	68. 0. 24	69. 39. 59
	14	71. 19. 23							

Stars Names.	Days	*Noon.*	III^{h}.	VI^{h}.	IX^{h}.	*Midnight.*	XV^{h}.	XVIII^{h}.	XX I^{h}.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Spica ♍.	14	18. 3. 2	19. 37. 0	21. 11. 27	22. 46. 19	24. 21. 31	25. 57. 2	27. 32. 43	29. 8. 34
	15	30. 44. 35	32. 20. 31	33. 56. 27	35. 32. 22	37. 8. 17	38. 44. 8	40. 19. 51	41. 55. 28
	16	43. 30. 58							
The Sun.	21	- - -	- - -	38. 58. 21	40. 20. 0	41. 41. 35	43. 3. 3	44. 24. 25	45. 45. 43
	22	47. 6. 56	48. 28. 5	49. 49. 10	51. 10. 13	52. 31. 12	53. 52. 8	55. 13. 3	56. 33. 57
	23	57. 54. 49	59. 15. 40	60. 36. 32	61. 57. 24	63. 18. 17	64. 39. 11	66. 0. 8	67. 21. 8
	24	68. 42. 11	70. 3. 17	71. 24. 28	72. 45. 44	74. 7. 5	75. 28. 32	76. 50. 7	78. 11. 49
	25	79. 33. 39	80. 55. 36	82. 17. 43	83. 40. 0	85. 2. 26	86. 25. 4	87. 47. 53	89. 10. 55
	26	90. 34. 10	91. 57. 37	93. 21. 19	94. 45. 16	96. 9. 27	97. 33. 53	98. 58. 36	100. 23. 36
	27	101. 48. 53	103. 14. 28	104. 40. 22	106. 6. 36	107. 33. 8	109. 0. 0	110. 27. 13	111. 54. 46
	28	113. 22. 41	114. 50. 58	116. 19. 37	117. 48. 40	119. 18. 5	120. 47. 54		
Fomalhaut.	26	37. 32. 6	38. 53. 46	40. 16. 11	41. 39. 19	43. 3. 9	44. 27. 40	45. 52. 48	47. 18. 34
	27	48. 44. 58	50. 11. 54	51. 39. 24	53. 7. 27	54. 36. 3	56. 5. 10	57. 34. 47	59. 4. 56
	28	60. 35. 36	62. 6. 45	63. 38. 24	65. 10. 32	66. 43. 10	68. 16. 17	69. 49. 53	71. 23. 58
	29	72. 58. 31	74. 33. 32	76. 9. 0	77. 44. 56	79. 21. 20	80. 58. 11	82. 35. 29	84. 13. 13
	30	85. 51. 25							
α Arietis.	30	24. 57. 49	26. 25. 14	27. 54. 27	29. 25. 20	30. 57. 47	32. 31. 44	34. 6. 55	35. 43. 19
	31	37. 20. 57	38. 59. 26	40. 38. 47	42. 19. 1	44. 0. 6	45. 41. 53	47. 24. 21	49. 7. 25
	J.1	50. 51. 2							

CONFIGURATIONS of the SATELLITES of JUP

at VII o'Clock in the Evening.

1	3. ·2 ○ 1. ·4
2	·3 ·1 ○ ·2
3	○ 1. ·3 2.
4	2. ○ ·1 ·2
5	·2 1. ○ 3.
6	○ ·1 3. ·2 4.
7	3. 1. ○ 2. 4.
8	·2 3. 4. ○ 1.
9	·3 4. ·1 ○ ·2
10	3·○ 4. ○ 1. 2.
11	4. 2. ○ ·2
12	4. ·2 1. ○ 3.
13	·4 ○ ·1 3. ·2
14	·4 1ϑ3 ○ 2.
15	·4 3. 2. ○ 1.
16	2.○ ·3 ·1 ·4 ○
17	·3 ○ 1. ·4 2.
18	·1 2. ○ ·3 ·4
19	1● ·2 ○ 3.
20	○ ·1 ·2 3.
21	1ϑ3 ○ 2.
22	3. 2. ○ ·1
23	·3 ·1 ·2 ○ 4.
24	·3 ○ 1ϑ4½.
25	2● ·1 4. ○ ·3
26	4. ·2 ○ 1. ·3
27	4. ○ ·1 ·2 3.
28	4. 1. 3. ○ 2.
29	·4 3. 2. ○ ·1
30	·4 ·3 1. ·2 ○
31	·4 ·3 ○ 1. ·2

EXPLANATION AND USE OF THE ARTICLES

CONTAINED IN THE

ASTRONOMICAL and NAUTICAL EPHEMERIS.

IT may be proper first to premise, that all the Calculations of the *Ephemeris* are made according to apparent Time by the Meridian of the *Royal Observatory* at *Greenwich:* And the Sun's, Planet's, and Moon's Places, with the Particulars depending on them in the IId, IVth, Vth, VIth, and VIIth Pages of each Month, are computed to the Instant of apparent Noon, or that of the Sun's Center passing the Meridian of *Greenwich.*

Apparent Time, at any Place, is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same Denomination, and to be counted up to 24 Hours or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, XV Hours belong to January 11 at Three in the Morning by Civil Reckoning.

There are XII. Pages for every Month. The first Column of the first Page of each Month contains the Day of the Week expressed concisely by the initial Letter or Letters, *Sun.* standing for Sunday, M. for Monday, Tu. for Tuesday, W. for Wednesday, Th. for Thursday, F. for Friday, and Sa. for Saturday: the second the Day

of the Month: the third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shews at Top the Moon's Phases, or the Times of New and Full Moon, and of the first and last Quarter or two Quadratures with the Sun: Beneath are contained miscellaneous Phænomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixt Stars not less than the fourth Magnitude, by the Moon, as they should happen at *Greenwich* by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of 60° North and 40° South: The Entrance of the Sun into the several Signs, and any other remarkable Phænomena.

The Stars are expressed by *Bayer*'s Characters of Reference. The Conjunction of the Moon or a Planet with a Star is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately before. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of Im. or Immersion, to signify the Disappearance behind the Moon; and Em. or Emersion, to signify the Re-appearance of the same. Thus $8^d.\ 16^h.\ 22'$ ☽ ϑ ♍, signifies that the Moon will be in Conjunction with the Star ϑ ♍ on the Eighth Day at $16^h.\ 22'$, exclusive of Parallax: And $10^d.\ 9^h.\ 14'$. Im. of ε ♊. $10^d.\ 10^h.\ 23'$ Em. signifies that the Moon will eclipse ε ♊ on the 10th Day, the Immersion being at $9^h.\ 14'$, and the Emersion at $10^h.\ 23'$, apparent Time at *Greenwich*.

The Occultations set down are those only visible at *Greenwich*; the Circumstances of which will commonly not differ very widely in most Parts of the Kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

An Eclipse of the Sun, or Occultation of a fixt Star by the Moon, if observed in a Place whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables; but if made in a Place whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been well settled; since the necessary Calculations may be made at any Time afterwards by themselves, at Leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipſes of the Moon are not liable to this Inconvenience; the Longitude of any Place, where the Eclipſe has been obſerved, being deduced immediately by taking the Difference of the Time of the Obſervation and that ſet down in the *Ephemeris*, and converting it into Degrees, at the Rate of 15° to One Hour, *&c.* or more briefly by Table XIV. page 38 of the 2d Edition of the Tables requiſite to be uſed with the *Ephemeris*. But, as the Beginning or Ending of an Eclipſe of the Moon cannot be generally obſerved nearer than One Minute, and ſometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a ſingle Obſervation of the Beginning or End nearer than a Degree. Even this Point of Exactneſs will often be of great Service. If both the Beginning and End of the Eclipſe be obſerved, a greater Degree of Exactneſs will be attained.

The Conjunctions of the Moon with the Planets, or fixt Stars not leſs than the fourth Magnitude, which may prove Occultations in ſome inhabited Parts of the Globe, are evidently deſigned to inſtruct Mariners or Travellers to look out frequently for ſuch Obſervations; which if they happen to prove Occultations, and are carefully obſerved, will afford a certain Means of determining the Longitude of the Place of Obſervation.

The Two firſt Columns of the Second Page of the Month contain the Day of the Week and Month as before; next follow the Sun's Longitude, right Aſcenſion in Time, Declination, and the Equation of Time with its Difference from Day to Day.

The Longitude of the Sun is made uſe of in moſt of the ſucceeding Calculations of the *Ephemeris*, and may ſerve either to verify them, or to make other ſimilar Calculations at a different Time of the Day. Particularly it may ſerve, with the Help of the Moon's Longitude, to find the Diſtance of the Moon from the Sun at any Time, independent of the Diſtances contained in the VIIIth, IXth, Xth, and XIth Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion muſt be made according to its daily Increaſe: Saying, as 24^h. is to the Hour from Noon reckoned by the Meridian of *Greenwich*, ſo is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from *Greenwich*, it muſt be firſt reduced thereto, by adding or ſubſtracting the Difference of Longitude turned into Time (at the Rate of One Hour to 15°. and One Minute of Time to 15 Minutes, or more briefly by Table XIV. Page 38, of the *Requiſite Tables*) according as the Place is to the Weſt or to the Eaſt of *Greenwich*. Example: Suppoſe any one ſhould want to know the Sun's Longitude, January 19, 1767, at 4^h. 35′, being in 21°. 15′ Longitude Eaſt of *Greenwich*. The Difference of Longitude turned into Time is 1^h. 25′ which ſubſtracted from 4^h. 35′ becauſe the Place is Eaſt of *Greenwich*, leaves 3^h. 10′ for the Time re-

duced to the Meridian of *Greenwich*. The Sun's Longitude the preceding Noon is 9s. 29°. 18′. 2″, and the following Noon it is 10s. 0°. 19′. 4″, the Difference is, 1°. 1′. 2″, or 61′. 2″, the daily variation. Then say, as 24h. is to 3h. 10′, so is 61′. 2″, to 8′. 3″, which added to 9s. 29°. 18′. 2″, the Sun's Longitude on the preceding Noon, gives 9s. 29 . 26′. 5″, the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the *Ephemeris*.

The Sun's Longitude serves also to compute the Aberration of the fixt Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks: For this Purpose the Sun's right Ascension at the preceding Noon, together with the Increase of right Ascension from Noon, must be added to the apparent Time of the Phænomenon set down in the *Ephemeris*.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star's passing the Meridian: Thus, substract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being substracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixt Star, suppose one contained in Page 7, of the *Requisite Tables*; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required, jointly with the Latitude of the Place and the Sun's horary Angle, to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes the Sun's Declination must

be found to the Time given nearly, reduced to the Meridian of *Greenwich*, making Proportion according to the daily Increaſe or Decreaſe, in like Manner as was ſhewn with reſpect to the Sun's Longitude.

The Equation of Time is a Correction, which added to, or ſubſtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which ſhould be ſhown by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Paſſage of the Sun's Center over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Aſcenſion uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Aſcenſion being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from theſe Cauſes it ariſes that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too ſlow or too ſoon to the Meridian for an equable Motion, ſuch as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the laſt Column but One of Page II. and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it be propoſed to convert mean Time into apparent, this is done by a contrary Proceſs, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; *viz.* ſubſtracting inſtead of adding, and adding inſtead of ſubſtracting.

The Equation of Time being ſet down in the *Ephemeris* for Noon at *Greenwich*, Proportion muſt be made, according to the daily Difference, to find what it ſhould be at any given Time reduced to the ſame Meridian, as in the preceding Articles. The laſt Column of this Page, containing the daily Differences of the Equation, is deſigned for this Purpoſe.

As often as it may be required to make any Calculations from aſtronomical Tables, and the Time given be apparent Time; it is neceſſary firſt to apply the Equation of Time thereto to convert it into mean Time, the Tables being diſpoſed according to mean Motions. Thus the Articles contained in the *Ephemeris* anſwering to Noon were computed to 0^h. increaſed, or 24 Hours of the preceding Day diminiſhed, by the Equation of Time: And the Moon's places ſet down for Midnight were computed to 12^h. increaſed or diminiſhed by the Equation of Time.

What has been ſhewn concerning the Equation of Time chiefly reſpects the Aſtronomer, the Mariner having nothing to do with it in computing his Longitude from the Moon's Diſtances from the Sun and Stars obſerved at Sea with the Help of the *Ephemeris*, all the

Calculations thereof being adapted to apparent Time, the ſame which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter preſcribed.

But if Time-keepers ſhould be brought into Uſe at Sea, the apparent Time deduced from an Altitude of the Sun muſt be corrected by the Equation of Time, and the mean Time found compared with that ſhewn by the Watch; the Difference will be the Longitude in Time from the Meridian by which the Watch was ſet, as near as the Going of the Watch can be depended upon.

The Equation of Time is computed by taking the Difference of the Sun's true right Aſcenſion and his mean Longitude corrected by the Equation of the Equinoxes in right Aſcenſion, and turning it into Time at the Rate of 1′. to 15′. &c. The Equation, of Time will be additive or ſubſtractive as the Sun's true right Aſcenſion is greater or leſs than his mean Longitude ſo corrected.

The Time of the Sun's Semidiameter paſſing the Meridian, Page III. ſerves to reduce an Obſervation of a Tranſit of the preceding or ſubſequent Limb over the Meridian to that of the Center, when only One was obſerved. It ſignifies a Portion of apparent Time, or even mean Time, the Difference being abſolutely inſenſible upon ſo ſmall an interval. It is found thus: Increaſe the Sun's Semidiameter in the Ratio of the Coſine of his Declination to the Radius, to find his Semidiameter in right Aſcenſion, which turned into Time at the Rate of 1′ to 15′. and 1″ to 15″ gives the Time required. The Sun's Semidiameter in right Aſcenſion is readily found by adding the Log. Coſine of his Declination to the logiſtic Logarithm of his Semidiameter, the Sum is the logiſtic Logarithm of his Semidiameter in right Aſcenſion; which divided by 15 gives the Time of his Semidiameter paſſing the Meridian. If the Clock by which the Obſervation is made be regulated according to the ſidereal Time, this Quantity muſt be increaſed in the Ratio of 365 to 366, if great Preciſion is required. From the Time of the Sun's Semidiameter paſſing the Meridian may alſo be found the Time of its paſſing the horizontal or vertical Wire of Quadrant or Sextant, which on ſome Occaſions may have its Uſe.

The Semidiameter of the Sun, is neceſſary to reduce the obſerved Altitude of his upper or lower Limb to that of the Center; alſo to reduce the obſerved Diſtance of the Moon's neareſt Limb from the Sun's neareſt Limb to the Diſtance of the Centers. It is alſo uſeful to Aſtronomers to verify or aſcertain the Exactneſs of the Scale of their Micrometers, by Compariſon with the Meaſure of the Sun's horizontal Diameter. This Practice is particularly uſeful in ſolar Eclipſes, when the Diſtance of the Cuſps or the Verſe Sine of the uneclipſed Part has been meaſured with the Micrometer. The Semidiameters of the Sun in *Mayer*'s Tables, on which all the Calculations reſpecting the Sun and Moon are made, ſuppoſe the Semidiameter at the mean Diſtance to be 16′. 2″, 8. which Mr. *Mayer* ſays he deduced from above 130 Obſervations taken with his Six Feet mural Quadrant, which ſeemed to him not ill adapted to the Purpoſe. It may not be amiſs to take this

Opportunity to remark, that the Quadrant here mentioned was given to the *University* of *Gottingen* by his late Majesty, and was made by that ingenious Artist the late Mr. *John Bird* after the Model of the Eight Feet mural Arch, which he finished for the *Royal Observatory* at *Greenwich*, and put up there in the Year 1750. Mr. *Mayer* made his Observations with his Six Feet mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at 23°. 28′. 16″, which Dr. *Bradley* settled by his Observations, reduced to the Year 1750, at 23°. 28′. 8″. The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the Rate of about ½ a Second in a Year. The same Instrument he also used in settling the Elements of his solar Tables; and it is most probable that with the same he settled his Table of Refractions at the End of his solar Tables; the Agreement of this Table with Dr. *Bradley*'s, see Page 1st of *Requisite Tables* (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than Two different Tables.

The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the *Nautical Ephemeris*; See *British Mariner*'s *Guide*, Page 49, and Table at the End of the same, Page 25. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed within a Century past, and the Position of the most distant Places determined with equal Accuracy to the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses; and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from time to time. In my Voyage to *Barbadoes*, under the Direction of the COMMISSIONERS OF LONGITUDE, in 1763 I made a full Trial of the late Mr. *Irwin*'s Marine Chair proposed for this Purpose, but could not derive any Advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any

Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes from 15 to 20 Feet, reflecting Telescopes of 18 Inches or Two Feet focal Length, and Telescopes of Mr. *Dollond*'s Construction with Two Object Glasses from 5 to 10 Feet; or, which are still more convenient, those of 46 Inches focal Length, constructed with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of Comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons, who visit distant Countries, are not more diligent to multiply Observations of this Kind; for want of which, the Observations made by Astronomers in established Observatories lose Half their Use, and the Improvement of Geography is retarded. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the purpose. The Eclipses, carefully calculated and set down in the *Ephemeris*, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person, who shall be under any Meridian different from *Greenwich*, must turn his Difference of Longitude into Time: See *Requisite Tables*, Page 38, and add it to or substract it from the Time of the Eclipse set down in the *Ephemeris*, according as he is to the East or West of *Greenwich*, to find the apparent Time at which the Eclipse will happen at his Meridian, nearly. He must further take care to regulate his Watch or Clock by apparent Time, or at least to know the Difference, as well in order to apprize him of the Time to look out for the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an Astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a *Hadley*'s Quadrant, by Reflection from a Bason of Water or Quicksilver, or from the Horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above-mentioned, at least Two or Three Points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made

on

on Purpose. It will be better to take several Altitudes in order to take a mean of the Results for greater Certainty. And if one Star be observed to the East and the other to the West of the Meridian, the Time will be determined with rather more Certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star is shewn by Problems VIII. and IX. Pages 25 and 26 of the Explanation and use of the *Requisite Tables*.

The Observer, being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion of the first Satellite; Six or Eight Minutes before that of the second and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on account of the Uncertainty of their Theories; but if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 3 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed one Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the *Ephemeris* for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emersions signify the first Instant of its Appearance at coming out of the same. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun the Immersions and Emersions happen on the West Side of Jupiter, and after the Opposition on the East Side; but, if an Astronomical Telescope be used, which reverses Objects, the Appearance will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emersions only. The same is generally the Case with respect to the second Satellite; both the Phænomena of the same Eclipse are frequently observable in the Two outer Satellites. The Immersions and Emersions marked with an Asterisk in the *Ephemeris*, are those visible at *Greenwich*.

To know if an Eclipse will be visible in any Place, find whether Jupiter be 8°. above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting may be found for any Latitude by a Table of semidiurnal Arcs, contained in the popular Book called *The Mariner's Compass Rectified*, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination see

down in the *Ephemeris*, with the Help of the ſame Table of ſemidiurnal Arcs; adding or ſubſtracting the ſemidiurnal Arc anſwering to the ſame Declination of the Sun: Remembering always, that if Jupiter's Declination and the Latitude of the Place are of the ſame Denomination, the ſemidiurnal Arc will be more than Six Hours, and if they are of contrary Denominations, will be leſs than Six Hours. But it may be eaſier found whether the Eclipſe will be viſible at *Greenwich*, or whether it ſhould be properly marked with an Aſteriſk, By the Tables, Page 28—31, annexed to the *Nautical Almanac* of 1772.

The Immerſion or Emerſion of any Satellite being carefully obſerved in any Place according to apparent Time, the Longitude from *Greenwich* is found immediately by taking the Difference of the Obſervation from the correſponding Time ſhewn in the *Ephemeris*, which muſt be turned into Degrees, &c. by *Requiſite Tables*, Page 38; and will be Eaſt or Weſt of *Greenwich*, as the Time obſerved is more or leſs than that of the *Ephemeris*.

Example; Suppoſe an Emerſion of the firſt Satellite ſhould be obſerved at the *Cape of Good Hope*, May 9, 1767, at $10^h. 46'. 45''$ apparent Time: The Time by the *Ephemeris* being $9^h. 33'. 12''$ the Difference is $1^h. 13'. 33''$, whence the Longitude of the *Cape* ſhould be $18^\circ. 23'. 15''$ Eaſt of *Greenwich*, becauſe the Time ſuppoſed to be obſerved at the *Cape* is more than that of the *Ephemeris*.

It is to be obſerved that a correſpondent Obſervation of an Eclipſe of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the *Ephemeris* for comparing with an Obſervation made in a Meridian whoſe Longitude is required; but if no correſponding Obſervation can be obtained, as is frequently the Caſe, it will be beſt to find what Correction the Calculations of the *Ephemeris* require by the neareſt Obſervations to the given Time that can be obtained; which Correction applied to the Calculation of the given Eclipſe in the *Ephemeris*, renders it almoſt equivalent to an actual Obſervation.

The Longitudes and Latitudes of the Planets, Page IV. ſerve to know where to look for them in the Heavens, and when their Places may be conveniently ſettled by comparing them with fixed Stars by the Help of a Micrometer in a Teleſcope. They alſo ſhew when they are in the moſt important Points of their Orbits, where it is moſt material to obſerve them. They alſo ſerve to enable Perſons leſs ſkilled to diſtinguiſh them from the fixed Stars. Their Declinations and the apparent Times of their paſſing the Meridian are particularly uſeful to Aſtronomers who are furniſhed with Quadrants and Tranſit Inſtruments well fixed in the Meridian, in ſetting their Inſtruments for obſerving their right Aſcenſions and Declinations.

The apparent Time of a Planet's paſſing the Meridian may be computed thus; the Planet's Right Aſcenſion being calculated from its Longitude and Latitude, and turned into Time, ſubſtract the Sun's right Aſcenſion at Noon in Time from it, to find the Time of the

Planet's passing the Meridian nearly, which call T; take the Difference of the ☉ and Planet's daily Variations in right Ascension in Time, if the Planet is progressive in right Ascension, or the Sun, if it is retrograde, which call X; then say, by the Rule of Proportion;

As $24^h \mp X : T :: X : e$ and $T \pm e$ will be correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to X and e if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made Use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the ☉ and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to 24^h. and take a further like proportional Part of this proportional Part; and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise substracted, gives the apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767.

The Sun's right Ascension in Time July 1st is, $6^h. 40'. 25''$ and July 2d, $6^h. 44'. 33''$ by the *Ephemeris*. Therefore his daily Motion in right Ascension is $4'. 8''$. The Moon's right Ascension July 1st at Noon by the *Ephemeris* is $159°. 2'$ answering to $10^h. 36'. 8''$ of Time, and July 2d is, $169°. 39'$ answering to $11^h. 18'. 36''$. The Difference is, $42'. 28''$ of Time, from which $4'. 8''$ being substracted, leaves $38'. 20''$. Substract $6^h. 40'. 20''$ the Sun's right Ascension July 1st at Noon, from $10^h. 36'. 8''$ the Moon's right Ascension the same Noon, the Remainder $3^h. 55'. 43''$ is the Approximate Time of the Moon's passing the Meridian. The proportional Part of $38'. 20''$, answering to this, is $6'. 17''$, and the proportional Part of $6'. 17''$ is $9''$; therefore $6'. 17''$ and $9''$ or $6'. 26''$ added to $3^h. 55'. 43''$. give $4^h. 2'. 9''$, the apparent Time of the Moon's passing the Meridian. In the *Ephemeris* it is $4^h. 2'$. It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then Half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: and if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planets, it will be sufficient to take the first proportional Part only.

The Days of the Oppositions, Quadratures, &c. of the Planets to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The Vth, VIth, VIIth, VIIIth, IXth, Xth, and XIth Pages of each Month contain the Moon's Place, and all the Circumſtances relating to her Motion, and her Diſtances from the Sun and proper Stars, from which her Diſtance ſhould be obſerved for finding the Longitude at Sea. The Longitude, Latitude, and Declination of the Moon, and Time of her paſſing the Meridian, afford the like Uſes with the ſame Circumſtances of the Planetary Motions, and many more beſides. For the ſake of greater Preciſion, the Moon's Longitude, Latitude, Right Aſcenſion, Declination, Semidiameter, horizontal Parallax, with its proportional Logarithm, are computed Twice a Day, to Noon and Midnight, and may readily be inferred to any intermediate Time with the greateſt Exactneſs.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at $16^h. 22'. 16''$.

Firſt to find the Longitude.

The Moon's Longitude, July 16, at 12^h is $0^s. 6^\circ. 40'. 25''$ and July 17 at Noon, $0^s. 13^\circ. 47'. 48''$ the Difference $7^\circ. 7'. 23''$ is the Moon's Motion in 12 Hours; ſay then, by the Rule of Proportion.

As 12^h is to $4^h. 22'. 16''$ (the Exceſs of $16^h. 22'. 16''$ above 12^h) ſo is $7^\circ. 7'. 23''$ to $2^\circ. 35'. 41''$ but this muſt be corrected on account of the Moon's unequal Motion in 12 Hours, by the Table of Equation of ſecond Difference annexed to Mr. *Taylor's Sexageſimal Table*, Page 244—247: for this Purpoſe take out of the *Ephemeris* the Two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and ſet them down in Order one after another, as follows;

		☽'s Long. by the *Ephemeris*.	1ſt Diff.	2d Diff.	Mean of 2d Dif.
1767		° ′ ″	° ′ ″	′ ″	′ ″
July 16,	Noon	11. 29. 29. 34			
	Midnight	0, 6. 40. 25	7. 10. 51	3. 28	
17,	Noon	0. 13. 47. 48	7. 7. 23	3. 44	3. 36
	Midnight	0, 20. 51. 27	7. 3. 39		

Take their Differences, $7^\circ. 10. 51''$, $7^\circ. 7'. 23$, $7^\circ. 3'. 39''$; take the Differences of theſe Differences, or the ſecond Differences $3'. 28''$, $3'. 44''$.; and take their Mean which is $3'. 36''$. Now look for the Equation of ſecond Difference, anſwering to $4^h. 22'$ after Midnight, found on the Side, and $3'. 36''$ at the Top, which will be found $= 24''$, and which, according to the Remark at the Bottom of the Table, muſt be added to $2^\circ. 35'. 41''$, the firſt proportional Part, becauſe the Motion in 12 Hours or firſt Differences are decreaſing, the Sum $2^\circ. 36'. 5''$ added to $0^s. 6^\circ. 40'. 25''$, the Moon's Longitude at Midnight, gives $0^s. 9^\circ. 16'. 30''$, the Moon's true Longitude, and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, vice versâ, first decrease and then increase, take Half the Difference of the Two second Differences for the Mean second Difference, with which take out the Equation of second Difference, and add or substract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude.

Take out of the *Ephemeris* the Two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, *&c.* of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table of Equation of second Difference, Page 244---247, with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of Seconds, which added to or substracted from the proportional Part found above, according as the Motion in 12 Hours or first Difference is decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to or substracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 1767, at $16^h.\ 22'.\ 16''$.

		☽'s Lat. by the *Ephemeris*.	1st. Dif.	2d Dif.	Mean of 2d Dif.
		° ′ ″	′ ″	′ ″	′ ″
1767, July 16,	Noon	4. 31. 10 N.	18. 26	4. 36	4. 40
	Midnight	4. 49. 36	13. 50	4. 44	
17,	Noon	5. 3. 26	9. 6		
	Midnight	5. 12. 32			

The Moon's Latitude July 16 at Midnight being 4°. 49′. 36″ N. and the Motion in the next 12 Hours being 13′. 50″ say by Proportion,

As 12^h is to $4^h.\ 22'.\ 16''$, so is 13.′ 50″ to 5′. 2″: but this must be corrected by adding 32″, the Equation of second Difference, answering to the Hour $4^h.\ 22'$, and the Mean second Difference 4′. 40″, because the first Differences are decreasing, or rather because the first of them 18′. 26″, is greater than the last of them 9′. 6″, therefore the proportional Part corrected is 5′. 2″ + 32″ = 5′. 34″, which added to 4°. 49′. 36″, gives 4°. 55′. 10″ N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the *Ephemeris* for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or vice versâ, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Equation of second Difference from Page 244---247, answering to the Mean second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraic Substraction and Addition, and the Manner of applying the Signs in those Operations. Substract each Latitude from the following for the first Differences, to which prefix the Sign — if the Latitudes decrease; and substract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences standing on each Side of the Interval to be interpolated, is to be accounted the Mean second Difference; the Equation corresponding to it by Table, Page 244---247, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Substraction and Addition. Note further, if the four given Latitudes change their Denomination, call the second Latitude +, and those of a contrary Denomination —.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed $2'\frac{1}{2}$, this may be neglected on most Occasions; but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shewn above.

The other Articles of Page VI. and VII. *viz.* the Moon's Right Ascension, her Semidiameter, horizontal Parallax, with its proportional Logarithm, and the Distances contained in the Four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on account of second Differences. The proportional Part of the Moon's Longitude, *&c.* for any Hour may be found very readily by the Help of the Table of proportional Logarithms, Page 39—55 of the *Requisite Tables.*

The Moon's Longitude and Latitude are used in computing her Distances from the Sun and Stars contained in the Four last Pages of

the Month, as well as in the Appulses to Stars pointed out in Page I, and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixt Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an observed Eclipse of the Sun, or Occultation of a Star or Planet by the Moon: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the *Ephemeris* shews the Error of the Tables at the Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The proportional Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her Distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy therein not being required for the Calculations of Refraction and Parallax. See *British Mariner's Guide*, Page 57 and *Requisite Tables*, Page 24. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper and lower Limb observed at Sea. See *British Mariner's Guide*, Page 93, and *Requisite Tables*, Page 15. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, tho' no Altitude of the Sun or a Star was taken for regulating the Time. See *British Mariner's Guide*, Page 61, and Mr. *Edwards*'s 5th Problem annexed to the *Nautical Almanac* of 1781, Page 10.

The Distances of the Moon from the Sun and fixed Stars, contained in the VIIIth, IXth, Xth and XIth Pages of the Month are set down to every Three Hours of apparent Time by the Meridian of *Greenwich*, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the Distance observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is a Remark not unworthy our Notice, that every future Improvement of the Lunar Tables, as well as the Instruments, will bring it nearer and nearer to Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun are computed between 40° and 120° of Distance. While the Moon is between the Distances of 20° and 40° from the Sun, her Distance is computed only from a Star on the contrary Side

that the Sun is. When she is between the Distances of 40° and 90° from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above 90° from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from 90° to 120°. Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the Help of the *Ephemeris*, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between 90° and 120° Distance from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them; Errors of these Kinds having a natural Tendency to correct each other; for that small Error which arises from the Lunar Tables will affect the Result from either Star equally. But the Error of *Mayer*'s last Lunar Tables are corrected from a series of Dr. *Bradley*'s Observations of 9 Years by Mr. *Charles Mason* in 1778, being these made use of for the *Nautical Almanac* of 1789, and the subsequent ones, probably never exceeding 30″, the Uncertainty hence arising in the Determination of the Longitude, can scarcely ever exceed 17 Miles of Longitude, and generally will be much less.

The Distances set down in the *Ephemeris*, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the *Ephemeris*, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of *Greenwich*; and direct his Sight to the East or West of the Moon, according as the Distance at *Greenwich* is found in the VIIIth and IXth, or Xth and XIth Pages of the Month; and having found the Moon upon little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at *Greenwich* is estimated nearly by turning the supposed Longitue from *Greenwich* into Time, by *Requisite Tables*, Page 38,

and adding it to or ſubſtracting it from the apparent Time at the Ship, as its Longitude is Weſt or Eaſt of *Greenwich*. It will be ſufficient if the Diſtance be computed from the *Ephemeris* within 10′, or 20′, for ſetting the Quadrant. The principal Uſe of the Diſtances of the Moon from the Sun and fixt Stars; namely, in determining the Longitude by Compariſon with the correſponding Diſtances obſerved at Sea, is ſhewn in Problem XI. Page 37 of *Requiſite Tables*.

The Diſtances contained in the *Ephemeris* were computed ſtrictly to Noon and Midnight, and thence interpolated for every Three Hours according to the Method ſhewn for computing the Moon's Latitude Page 157---158; except that the Correction of ſecond Differences at the Middle of the Interval to be interpolated, was taken $\frac{1}{8}$ of the Mean of the Two ſecond Differences, and at the Firſt and Third Quarter of the Interval was taken $\frac{3}{4}$ of the Correction juſt found at the Middle of the Interval; inſtead of conſulting Mr. *Taylor*'s Table, Page 248 and 249, which would however have given the ſame Reſult. But, at the firſt 12 Hours, when the Diſtances of the Moon from a Star begin, and the laſt 12 Hours, when the Diſtances end, there being only One ſecond Difference inſtead of Two ſecond Differences on each Side to take a Mean of, this Method fails in theſe Caſes, and therefore the following is to be ſubſtituted in its Stead, being derived from Sir *Iſaac Newton*'s Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates. *Phil. Nat. Princ. Math.* Page 486. Edit. *Londini* 1726, or Dr. *Horſley*'s complete Edition of Sir *Iſaac Newton*'s Works, Vol. 3d. Page 128.

From Four Diſtances at Noon and Midnight computed ſtrictly to interpolate Three Diſtances at the IIId, VIth, and IXth Hour of the firſt or laſt Interval.

Subſtract each Diſtance from the following, for the firſt Difference, and prefix the Sign —, if the Diſtances decreaſe. Subſtract each firſt Difference thus found from the following One of the ſame Order, for the ſecond Difference: And in like Manner ſubſtract the Firſt ſecond Difference from the following for the third Difference; applying the Signs as in algebraic Subſtraction. Denote the firſt or laſt firſt Difference by b; the firſt or laſt ſecond Difference by c, according as the Interpolation to be made is for the firſt or laſt 12 Hours; denote alſo the third Difference by d; and, a being put to ſignify the Diſtance at the Beginning of the Interval, the interpolated Diſtances will be as follows:

At IIId Hour of firſt Interval	$a + \frac{1}{4}b - \frac{3}{32}c + \frac{7}{128}d$
At VIth Hour of firſt Interval	$a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d$
At IXth Hour of firſt Interval	$a + \frac{3}{4}b - \frac{3}{32}c + \frac{5}{128}d$
Or,	
At IIId Hour of laſt Interval	$a + \frac{1}{4}b - \frac{3}{32}c - \frac{5}{128}d$
At VIth Hour of laſt Interval	$a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d$
At IXth Hour of laſt Interval	$a + \frac{3}{4}b - \frac{3}{32}c - \frac{7}{128}d$

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if b, c, or d is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or VIth Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+\frac{1}{128}d$ or third Difference, to Number found at the first Quarter of the Interval, and $-\frac{1}{128}d$ to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

The Configurations of Jupiter's Satellites, Page XIIth and last, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark ○, and the Satellites by Points with Figures annexed, the Figure 1 signifying the the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right hand or West of Jupiter approaching him; or to the left Hand or East of Jupiter receding from him; but are in the inferior Part of their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher ○, sometimes annexed to the Figure of the Satellite towards the Margin, signifies, that it is invisible on the Face of Jupiter; and the black Mark ●, signifies that it is invisible, being eclipsed in Jupiter's Shadow, or, behind Jupiter eclipsed by his body.

THE END.

TABLES

TO

IMPROVE AND RENDER MORE GENERAL

THE

METHOD OF FINDING THE LATITUDE,

BY OBSERVING TWO ALTITUDES OF THE SUN,

AND THE INTERVAL OF TIME BETWEEN.

BY JOHN BRINKLEY, *A. M.*

ANDREW'S PROFESSOR OF ASTRONOMY, *DUBLIN*;

LATE FELLOW OF CAIUS COLLEGE, *CAMBRIDGE*.

PUBLISHED BY ORDER

OF THE

COMMISSIONERS OF LONGITUDE.

1794.

A GENERAL REMARK,

SHEWING WHEN THE FOLLOWING

TABLES

ARE TO BE USED.

BY THE ASTRONOMER ROYAL.

IF the Latitude computed by the Rules given in the *R*
Tables, under the Restrictions in the Remarks at the End
Examples, differs less than five Minutes from the Latitu
Account, it will be within a Minute of the true Latitude
therefore no further Operation will be necessary. If the con
Latitude differs five Minutes or more from the Latitude b
count, the following Tables are here proposed to be used, i
of repeating the Operation by the *Requisite Tables*, as being
concise, but particularly as bringing out a true Result whe
common Method fails, from the computed Latitude fou
repeated Operations not approaching nearer and nearer, or
is commonly called, not converging to the true Latitude,
sufficiently fast; which cannot be known till after the t
of going through those Operations.

THE LATITUDE may generally be found from obſerving two ALTITUDES of the SUN and the INTERVAL OF TIME between, by one Operation, as is directed in the *Requiſite Tables*, with the Aſſiſtance of the following Tables: but it is to be obſerved, that the Argument of Table I. is the true Latitude, and as only the Latitude by Account and the computed Latitude are known, there will be a Source of Error from this Cauſe when the Declination and Latitude are nearly equal and of the ſame Name; however, the Error ſo ariſing, may in moſt Caſes be corrected by the Directions hereafter given. This Method ought not to be depended on when the Latitude by Account and Declination of the ſame Name are ſo nearly equal that it is uncertain whether the true Latitude is greater or leſs than the Declination. There is alſo another Caſe in which the Method cannot be applied, taken Notice of in the Rules. In conſtructing the 2d and 3d Tables, regard has been paid to the proper Interval of Time between the Obſervations neceſſary to prevent the Latitude being too much affected by the Errors of the Obſervations and of the going of the Watch. The Limit of the Interval is ſuppoſed ſuch as is directed by the Rules in Dr. MASKELYNE's *Britiſh Mariner's Guide*, and in the *Requiſite Tables*; which Rules are deduced from two Theorems given in the *Britiſh Mariner's Guide*. Perhaps in the preſent improved State of Sextants and Watches, the Limit may be ſomewhat extended.

The ſecond Table is not calculated beyond ſix Hours from the Meridian. When the Latitude and Declination are of the ſame Name, and both leſs than 4 or 5 Degrees, ſmall Errors in the Altitudes and Interval will cauſe a very great Error in the Latitude, unleſs the Obſervations are made very near Noon, therefore in ſuch Caſes the Latitude found cannot be depended on: But this Defect muſt be common to all Methods.

TABLE I.

The Argument on the Top is the Degree of the Declination, and that on th is he Degree of Latitude.

The Sum or Difference of the Number found by this Table and Unity m taken The Sum to be used when the Declination, and Latitude are of di Denominations and the Differenc when of the ame.

D.	1	2	3	4	5	6	7	8	9	10	11
1											
2	In the first six Degrees of Latitude, divide the Declina										
3	by the Latitude, and the Quotient will be the Number of										
4	Table.										
5											
6											
7	,15	,29	,43	,57	,71	,86	1,00	1,14	1,29	1,43	1,58
8	,13	,25	,37	,50	,62	,75	,88	1,00	1,13	1,26	1,38
9	,11	,22	,33	,44	,55	,67	,78	0,89	1,00	1,11	1,22
10	,10	,20	,30	,40	,50	,60	,70	0,80	,90	1,00	1,10
11	,09	,18	,27	,36	,45	,54	,63	,72	,81	,90	1,00
12	,08	,16	,25	,33	,41	,49	,57	,66	,74	,83	,91
13	,08	,15	,23	,31	,38	,46	,54	,61	,68	,76	,84
14	,07	,14	,21	,28	,35	,42	,49	,56	,63	,70	,78
15	,07	,13	,19	,26	,32	,39	,46	,52	,59	,66	,72
16	,06	,12	,18	,24	,31	,37	,43	,49	,55	,61	,68
17	,06	,12	,17	,23	,28	,34	,40	,46	,52	,58	,64
18	,05	,11	,16	,21	,27	,32	,37	,43	,48	,54	,59
19	,05	,10	,15	,20	,25	,30	,35	,40	,46	,51	,56
20	,05	,10	,14	,19	,24	,29	,34	,39	,43	,48	,53
21	,04	,09	,14	,18	,22	,27	,32	,37	,41	,46	,50
22	,04	,09	,13	,17	,21	,26	,30	,34	,39	,44	,49
23	,04	,08	,12	,16	,20	,25	,29	,33	,37	,41	,45
24	,04	,08	,12	,16	,20	,24	,28	,31	,35	,40	,44
25	,04	,08	,11	,15	,18	,22	,26	,30	,34	,38	,42
26	,04	,07	,11	,14	,17	,21	,25	,28	,32	,36	,40
27	,03	,07	,10	,14	,17	,21	,24	,27	,31	,35	,38
28	,03	,06	,10	,13	,16	,20	,23	,26	,30	,33	,36
29	,03	,06	,09	,12	,15	,19	,22	,25	,28	,31	,34
30	,03	,06	,09	,12	,15	,18	,21	,24	,27	,30	,33
32	,03	,05	,08	,11	,14	,17	,20	,22	,25	,28	,31
34	,03	,05	,08	,11	,13	,16	,18	,20	,23	,26	,29
36	,02	,04	,07	,09	,11	,14	,16	,19	,22	,24	,26
38	,02	,04	,07	,09	,11	,13	,15	,17	,20	,22	,24
40	,02	,04	,06	,09	,11	,13	,15	,17	,19	,21	,23
42	,02	,04	,06	,08	,10	,12	,14	,16	,18	,20	,22
45	,02	,03	,05	,07	,09	,11	,12	,14	,16	,18	,20
48	,02	,03	,05	,07	,08	,10	,11	,12	,14	,16	,18
51	,01	,02	,04	,06	,07	,08	,10	,11	,13	,14	,16
55	,01	,02	,04	,05	,06	,07	,08	,09	,11	,13	,14
59	,01	,02	,03	,04	,05	,06	,07	,08	,10	,11	,12
63	,01	,01	,02	,03	,04	,05	,06	,07	,08	,09	,10
68	,01	,01	,01	,02	,03	,03	,04	,05	,06	,07	,08
74	,00	,01	,01	,02	,02	,02	,03	,03	,04	,05	,0
	,00	,01	,01	,01	,02	,02	,02	,03	,03	,03	,0

TABLE I. *continued.*

The Argument on the Top is the Degree of the Declination, and that on the Side the Degree of Latitude.

The Sum or Difference of the Number found by this Table and Unity must be used. The Sum to be used when the Latitude and Declination are of different Denominations, and the Difference when of the same.

D.	13	14	15	16	17	18	19	20	21	22	23
1											
2	In the first Six Degrees of Latitude, divide the Declination										
3	by the Latitude, and the Quotient will be the Number of this										
4	Table.										
5											
6											
7	1,88	2,0	2,2	2,3	2,5	2,6	2,8	2,9	3,1	3,3	3,4
8	1,64	1,77	1,91	2,1	2,2	2,3	2,5	2,6	2,7	2,9	3,0
9	1,46	1,57	1,69	1,81	1,93	2,1	2,2	2,3	2,4	2,6	2,7
10	1,31	1,42	1,55	1,63	1,73	1,84	1,95	2,1	2,2	2,3	2,4
11	1,19	1,28	1,37	1,47	1,57	1,66	1,76	1,88	1,98	2,1	2,2
12	1,09	1,18	1,26	1,35	1,44	1,53	1,62	1,71	1,80	1,90	1,99
13	1,00	1,08	1,16	1,24	1,33	1,41	1,49	1,57	1,66	1,74	1,83
14	,93	1,00	1,07	1,15	1,23	1,30	1,38	1,46	1,54	1,62	1,70
15	,86	,93	1,00	1,06	1,14	1,21	1,28	1,36	1,43	1,51	1,59
16	,81	,87	,94	1,00	1,06	1,13	1,20	1,27	1,34	1,41	1,48
17	,75	,81	,88	,93	1,00	1,06	1,12	1,18	1,26	1,32	1,38
18	,71	,76	,83	,88	,94	1,00	1,06	1,12	1,19	1,24	1,30
19	,67	,72	,78	,83	,89	,94	1,00	1,06	1,12	1,17	1,23
20	,63	,68	,74	,79	,84	,89	,95	1,00	1,06	1,11	1,16
21	,60	,65	,70	,75	,80	,85	,90	,95	1,00	1,05	1,10
22	,57	,62	,66	,71	,75	,81	,85	,90	,95	1,00	1,05
23	,56	,59	,63	,67	,71	,77	,81	,86	,90	,95	1,00
24	,51	,56	,60	,64	,68	,73	,77	,82	,86	,91	,95
25	,49	,53	,57	,61	,66	,70	,74	,78	,82	,87	,91
26	,47	,51	,55	,58	,63	,67	,70	,74	,78	,83	,87
27	,45	,49	,53	,56	,60	,64	,67	,71	,75	,79	,83
28	,43	,47	,50	,54	,57	,61	,64	,68	,72	,76	,79
29	,42	,45	,48	,52	,55	,59	,62	,66	,69	,73	,76
30	,41	,43	,46	,50	,53	,57	,60	,64	,66	,70	,73
32	,37	,40	,43	,46	,49	,52	,55	,58	,61	,64	,67
34	,34	,36	,39	,42	,45	,48	,51	,54	,57	,59	,62
36	,32	,34	,37	,39	,42	,45	,47	,50	,53	,55	,58
38	,29	,32	,34	,36	,39	,41	,43	,46	,49	,51	,54
40	,27	,30	,32	,34	,36	,38	,40	,43	,45	,48	,50
42	,26	,28	,30	,32	,34	,36	,38	,40	,43	,45	,47
45	,23	,25	,27	,29	,31	,32	,34	,36	,38	,40	,42
48	,21	,22	,24	,26	,28	,30	,31	,32	,34	,36	,38
51	,19	,20	,22	,23	,25	,26	,28	,29	,31	,32	,34
55	,16	,17	,19	,20	,21	,22	,24	,25	,27	,28	,30
59	,14	,15	,16	,17	,18	,19	,20	,21	,23	,24	,26
63	,12	,13	,14	,15	,16	,17	,18	,19	,20	,21	,22
68	,09	,10	,11	,11	,12	,13	,14	,15	,16	,17	,18
74	,06	,06	,07	,07	,08	,08	,09	,09	,10	,11	,12
80	,04	,04	,04	,04	,05	,05	,06	,06	,07	,07	,08

TABLE II.

To be uſed when the Obſervations are on the ſame Side of Noon.

The Argument on the Top is the Time neareſt Noon, and that on the Side is the middle Time.

h ′	h ′ 0. 10	h ′ 0. 20	h ′ 0. 30	h ′ 0. 40	h ′ 0. 50	h ′ 1. 0	h ′ 1. 10	h ′ 1. 20	h ′ 1. 30	h ′ 1. 40	h ′ 1. 50	h ′ 2. 0	h ′ 2. 10	h ′ 2. 20	h ′ 2. 30	h ′ 2. 40	h ′ 2. 50	h ′ 3. 0
0. 10																		
20	,003																	
30	,005	,007																
0. 40	,007	,011	,014															
50	,009	,015	,020	,023														
1. 0	,011	,019	,026	,031	,034													
1. 10	,013	,023	,032	,038	,044	,047												
20	,015	,027	,038	,048	,055	,060	,064											
30	,017	,032	,045	,057	,066	,073	,079	,081										
1. 40	,019	,036	,052	,066	,077	,087	,094	,099	,102									
50	,022	,041	,059	,075	,089	,101	,110	,118	,123	,126								
2. 0	,024	,046	,066	,085	,100	,115	,127	,137	,145	,150	,151							

h ′	h ′ 0. 10	h ′ 0. 20	h ′ 0. 30	h ′ 0. 40	h ′ 0. 50	h ′ 1. 0	h ′ 1. 10	h ′ 1. 20	h ′ 1. 30	h ′ 1. 40	h ′ 1. 50	h ′ 2. 0	h ′ 2. 10	h ′ 2. 20	h ′ 2. 30	h ′ 2, 40	h ′ 2. 50	h ′ 3. 0
2. 10	,026	,051	,074	,096	,114	,131	,146	,158	,168	,175	,180	,185						
20	,029	,057	,082	,105	,128	,147	,165	,180	,192	,202	,210	,216	,219					
30	,032	,063	,092	,117	,142	,165	,185	,202	,218	,230	,241	,250	,255					
2. 40	,036	,069	,101	,129	,158	,183	,206	,227	,245	,261	,274	,286	,294					
50	,039	,076	,111	,142	,174	,203	,230	,254	,275	,293	,310	,324	,335					
3. 0	,043	,083	,121	,157	,192	,225	,258	,282	,307	,329	,349	,366	,380					
3. 10		,091	,133	,174	,211	,248	,281	,313	,340	,367	,389	,411	,428					
20			,146	,192	,233	,274	,311	,348	,379	,410	,436	,462	,482	,503				
30				,211	,257	,303	,345	,386	,422	,457	,488	,518	,542	,566	,587			
3. 40					,329	,336	,383	,429	,470	,510	,545	,580	,609	,638	,661	,684		
50						,372	,425	,477	,523	,569	,610	,651	,685	,719	,747	,775	,785	
4. 0							,474	,533	,586	,638	,685	,732	,772	,813	,847	,880	,906	,932
4. 10								,597	,659	,718	,773	,827	,874	,921	,961	1,00	1,03	1,06
20									,741	,812	,875	,938	,994	1,05	1,08	1,14	1,18	1,22
30										,926	1,00	1,07	1,14	1,20	1,26	1,32	1,37	1,41

TABLE III.

To be uſed when the Obſervations are on different Sides of Noon.

The Argument on the Top is the Time neareſt Noon, and that on the Side is the middle Time.

h ′	10′	20′	30′	40′	50′	1h. 0′	1h. 10′	1h. 20′	1h. 30′	1h. 40′	1h. 50′	2h. 0′	2h. 10	
0. 10	,003	,005	,007	,009	,011	,013	,015	,017	,019	,021	,024	,026	,028	
20	,008	,011	,015	,019	,023	,027	,031	,035	,040	,044	,049	,054	,059	
30	,014	,020	,026	,032	,038	,044	,050	,056	,063	,070	,077	,084		
0. 40	,022	,030	,038	,046	,053	,061	,069	,078	,087	,096	,105			
50	,034	,043	,052	,062	,072	,082	,092	,103	,114	,125				
1. 0	,046	,057	,068	,080	,091	,103	,115	,128	,141					
1. 10	,059	,072	,085	,099	,113	,127	,141	,156						
20	,075	,090	,105	,120	,136	,152	,168							
30	,092	,109	,126	,143	,161	,179								
1. 40	,113	,131	,149	,168	,187									
50	,133	,153	,173	,194										
2. 0	,156	,178	,200											
10	,180	,192												

USE OF THE TABLES.

WITH the Latitude by Account compute the Latitude once, as directed in the *Requisite Tables*.

I. If the Observations are on the same Side of Noon.

When the Declination is greater than the Latitude and of the same Denomination; the Latitude by Account and that computed will be on the same Side of the true Latitude.

When the Latitude and Declination are of different Denominations, or when the Latitude is greater than the Declination, the Latitude computed and that by Account will be on different Sides of the true Latitude.

II. If the Observations are on different Sides of Noon, just the contrary will take place.

Take the Sum or Difference of the Number found by Table I. and Unity, according as the Latitude and Declination are of a Different or the same Denomination.

Divide this Sum or Difference by the Number taken from Table II. or III. Increase or diminish the* Quotient by Unity according as the true Latitude is or is not between the Latitude by Account and that computed.

Lastly divide the Difference between the Latitude by Account and that computed by the above Quotient so increased or diminished, and the Result will be the Correction to be applied to the Latitude computed.

OBSERVATION I. When the Latitude and Declination are nearly equal, it will be proper to correct the Latitude twice: This is done by using the Latitude once corrected for the Argument of Table I. instead of the Latitude computed.

OBSERVATION II. When the Latitude computed is farther from the true Latitude than the Latitude by Account is: It is possible that the corrected Latitude may differ several Minutes from the Truth, if the Latitude by Account be far from the Truth. In such case use the Latitude corrected as the Latitude by Account and repeat the whole Operation.

OBSERVATION III. In the particular Case, when the Latitude per Account and that computed are on the same Side of the true Latitude, and the Quotient mentioned in the Rule happens to be nearly equal to Unity, this Method cannot be depended on.

* *N. B.* According as this Quotient is greater or less than Unity, the Latitude computed will or will not be nearer the true Latitude than the Latitude by Account is.

EXAMPLE

EXAMPLE I.

A. M. greater Alt. 50°. 1′,2 } 1h. 30′. Star's declin. 14°
A. M. less Altitude 41 . 33 ,2 } Interval Lat. by Acc. 52°.50′
Lat. computed 52°. 5′¾ Middle Time 1h. 46′,7
Time nearest Noon 1 . 1 ,7

By the Rule the true Latitude is between the Latitude Account and that computed.

Table I. gives ,2 Table II. gives ,09

Difference $\frac{1}{,8}$

$\frac{,8}{,09} = 9$

Add 1

Sum 10

Lat. by Account 52°. 5
Lat. computed 52 .

Difference 4

$\frac{44\frac{1}{4}}{10} = 4',4$ Correction of I

52. 5,7 Lat. computed

52. 10,1

N. B. True Latitude is 52°. 10′.

Times of Observ. 9h. 30′. 11 . 0. } A. M.

EXAMPLE II.

A. M. Altitude 50°. 1′,2 } 3h. 30′. Lat. by Acc. 51°. 30′
P. M. Altitude 41 . 33 ,2 } Interval Declination 14

By the Rule the true Latitude is not between the Latitude Account and that computed.

Lat. computed 52°. 5′,2 Middle Time 0h. 44¼ Tab. I. gives
Lat. by Account 51 . 30 T. nearest Noon 1 . 0¾

Difference 35,2

Difference Tab. III. gives

$\frac{35,2}{9} = 3',9$ Corrn. of Latitude.

$\frac{0,8}{,08} =$

52. 5,2

Subtract

52. 9,1 Latitude corrected.

Diff.

EXAMPLE III.

P. M. Altitude 70°. 1′ } Interval Lat. by Account 6°. 30′ N.
P. M. Altitude 35 . 21 } 2h. 20′. Declination 5 . 30 N.

By the Rule the true Latitude is between the Latitude by Account and that computed.

Lat. computed 8°. 16′ Middle Time 2h. 29′½ Tab. I. gives ,66
Lat. by Account 6 . 30 T. nearest Noon 1 . 19 ½ 1

Difference 1 . 46 = 106′ Difference ,34
Tab. II. gives ,20

$\frac{,34}{,2}$ = 1,7
Add 1
Sum 2,7

$\frac{106'}{2,7}$ = 40′ Correction of Lat.
8.16
7.36 Lat. once correct^d.

Since in this Example the Declination and Latitude are nearly equal, the Latitude ought to be twice corrected.

Tab. I. entered with Lat. 7°. 36′ gives ,74
1,00
Difference — — 0,26

$\frac{,26}{,2}$ = 1,3
Add 1
Sum 2,3

$\frac{106'}{2,3}$ = 46′ Correction of Latitude.
8. 16
7. 30 Latitude twice corrected.

N. B. The true Latitude is 7°. 30′, and it would have required seven Operations by the common Method to have had the Latitude within 10′ of the Truth.

EXAMPLE IV.

A. M. Altitude 75°. 8′,6 } Interval Lat. by Account 10°. 10′ N.
P. M. Altitude 42 . 31 ,6 } 4h. 15′. Declination 11 . 0 N.

By the Rule the true Latitude is between the Latitude by Account and that computed.

Lat. computed 8°. 52′ Mid. T. 1h. 6′,7 T. nearest N. 0h. 59′,8
Lat. by Acc. 10 . 10 Table I. gives 1, 24 Tab. III. gives

1 . 18 = 78′ 1

Difference 0, 24

$\frac{,24}{,11}$ = 2,2
Add 1
3,2

$\frac{78'}{3,2}$ = 24′ correction of Lat.

8. 52

9. 16 Lat. once corrected.

With Argum. of Lat. 9°. 16′ T. I. gives 1, 19
1
Difference — — ,19 $\frac{,19}{,11}$ = 1, 7
1
2, 7

$\frac{78'}{2,7}$ = 28′ Corrn. of Latitude 8. 52
28

9. 20 Latitude corrected.

N. B. True Latitude is the same.

EXAMPLE V.

A. M. Altitude 5°. 36′,1 } Interval Sun's Declination 12°
A. M. Altitude 45 . 5 ,7 } 3h Lat. by Account 27

The true Latitude is between the Latitude computed a that by Account.

Lat. computed 30°. 5′ Middle T. 4h. 25′ Table I. gives ,
Lat. by Acc. 27 T. nearest N. 2 . 55 1

3 . 5 = 185′ Difference 0,
Table II. gives 1,

$\frac{,63}{1,41}$ = ,45
Add 1
Sum 1,45

$\frac{185'}{1,45}$ = 128′ = 2°. 8′ corrn. of Lat
30. 5

27,57 Lat. correct

n this Example the Latitude computed is twice as far from the ith as the Latitude by Account is; and the Latitude by Ac- nt is nearly a Degree from the Latitude computed, the Opera- ought therefore to be repeated using the last-found Latitude e Latitude by Account.

Lat. recomputed is	28°. 7′½	$\frac{10'\frac{1}{2}}{1,45} = 7'\frac{1}{2}$	28°. 7′½	Lat. by Acc.
nde by Account	27 . 57		7 ½	Correction.
rence	10½		28 . 0	Lat. corr^d.

. B. The true Latitude is 28°. 0′. and the Times of Observa- 6^h. A. M. and 9^h. A. M.

he Tables are calculated, and the Rules deduced from the wing Formulas:

et L = true Latitude, D = the Declination, T = the e nearest Noon, and M = the Middle Time.

$$m = 1 \underset{\sim}{+} \frac{t,D}{t,L}$$

$$\overline{s,T \times t,M - vs,T}$$, When both Observations are on the same Side of Noon.

$$m = 1 \underset{\sim}{+} \frac{t,D}{t,L}$$

$$\overline{s,T \times t,M + vs,T}$$, When the Observations are on different Sides of Noon.

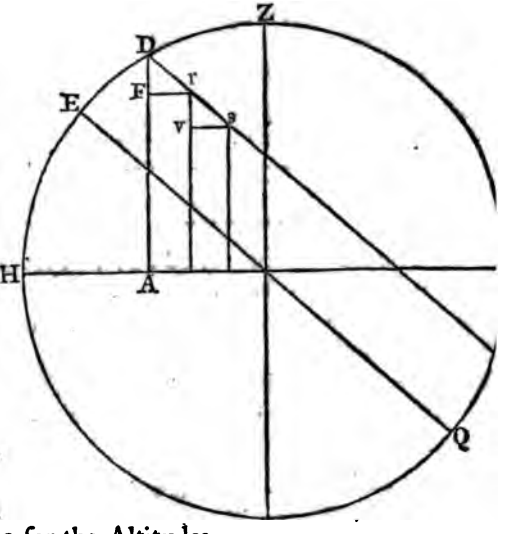
he Sign + to be used when the Declination and Latitude of different Denominations, and ~ when of the same: then Error in the computed Latitude = the Difference between omputed Latitude and Latitude by Account divided by m ± 1;

by m + 1 { Observations on the same Side of Noon, and Latitude greater than the Declination or of a diff. Denomina. Observations on different Sides of Noon, and Latitude less than the Declination and of the same Denomin.

by m − 1 { Observations on same Side of Noon, and Latitude less than Declination and of same Denomination. Observations on different Sides of Noon, and Latitude greater than Declination or of a different Denomina.

I. B. The Number found by Table I. is $\frac{t,D}{t,L}$, that found by le II. is s, T × t, M − vs, T and that found by Table III. is × t, M + vs, T.

DEMONSTRATION.



HO, EQ, Dd, &c. represent the respective orthographic Projections of the Horizon, Equator, parallel of Declination, and on the Plane of the Meridian H E D Z O d Q and let r and s represent the Places of the Sun at the two Observations.

Put P = the Interval of Time between the Observations reduced into space, A and a for the Altitudes.

When the Observations are on the same Side of Noon, M = $\frac{1}{2}$ P; also;

$$rs : vr :: rad. : cs, L$$

$$cs, T - cs, \overline{T + P} : rs :: rad. : cs, D$$

$$\because cs, T - cs, \overline{T + P} : vr = s, A - s, a :: rad.^2 : cs, L \times cs, D$$

$$\text{or } s, \tfrac{1}{2} P \times s, M : cs, \frac{A + a}{2} \times s, \frac{A - a}{2} :: rad.^2 : cs, L \times c$$

$$\text{or } s, M = cs, \frac{A + a}{2} \times s, \frac{A - a}{2} \times rad^2.$$

$$\overline{s, \tfrac{1}{2} P \times cs, L \times cs, D}$$

$$\text{But } T = M - \tfrac{1}{2} P \text{ and } Dr = \frac{vs, T \times cs, D}{rad.}$$

$$DF : Dr :: cs, L : rad. \because DF = \frac{vs, T \times cs, D \times c}{rad^2.}$$

$$\text{and } s, \text{Mer. Alt.} = DF + s, A$$

$$\text{The Lat.} = \begin{cases} D \pm \text{computed Mer. Altitude when the Latitude} \\ \quad \text{Declination are of the same Denomination.} \\ \text{Computed Mer. Altitude} - D \text{ when the Latitude} \\ \quad \text{Declination are of different Denominations.} \end{cases}$$

The above is the Substance of the Rule commonly given.

Now call c the Latitude thus found or the computed Latitude, hen $\dot{c} = \pm$ Flux. Meridian Altitude, + when the Latitude is eſs than the Declination and of the ſame Name, otherwiſe —

ut Flux.Mer.Alt. $= \dfrac{\overline{\dot{s}, \text{Mer. Alt.}} \times \text{rad.}}{\text{cs, Meridian Alt.}} = \dfrac{\dot{D}F}{s, \overline{L \underset{\sim}{+} D}}$ (rad.being=1)

$\therefore \dot{c} = \dfrac{\pm \dot{D}F}{s, \overline{L \underset{\sim}{+} D}} = \pm \dfrac{cs, D}{s, \overline{L \underset{\sim}{+} D}} \times \overline{\overline{\dot{vs}, T} \times cs, L + vs, T \times \overline{\dot{cs}\, L}}$

appears from above that $\dot{T} = \dot{M} = \dfrac{\overline{\dot{s}, M}}{cs, M} = \dfrac{\overline{\dot{s}, M}}{s, M} \times, t, M =$

$-\dfrac{\overline{\dot{cs}, L}}{cs, L} \times t, M = \dot{L} \times t, L \times t, M \therefore \overline{\dot{vs}, T} = s, T \times \dot{T} = \dot{L}$

$\times t, L \times t, M \times s, T$ alſo $\overline{\dot{cs}, L} = -\dot{L} \times s, L$:

Conſequently $\dot{c} = \pm \dfrac{cs, D \times \dot{L}}{s, \overline{L \underset{\sim}{+} D}} \times \overline{s, T \times t, M \times t, L \times cs, L - vs, T \times cs, L}$

$= \pm \dfrac{cs, D \times s, L \times \dot{L}}{s, \overline{L \underset{\sim}{+} D}} \times \overline{s, T \times t, M - vs, T} = \pm \dfrac{cs, D \times s, L \times \dot{L}}{s, L \times cs, D \underset{\sim}{+} cs, L \times s, D}$

$\times \overline{s, T \times t, M - vs, T} = \dfrac{\pm \dot{L}}{1 \underset{\sim}{+} \dfrac{t, D}{t, L}} \times \overline{s, T \times t, M - vs, T}$

$= \pm \dfrac{\dot{L}}{m}$, putting $m = \dfrac{1 \underset{\sim}{+} \dfrac{t, D}{t, L}}{\overline{s, T \times t, M - vs, T}}$

What is true for the Fluxions will be nearly ſo for the Increments, and will be ſufficiently true for Nautical Purpoſes even when the Increments are large. Let r = Latitude by Account, and t = the true Latitude; then $t \sim r : t \sim c :: m : 1 \therefore$ $t \sim c : r \sim c :: 1 : m \pm 1$, or $t \sim c = \dfrac{r \sim c}{m \pm 1}$ Q.E.D.

In the ſame manner the Truth of the Formulas may be proved when the Obſervations are on different Sides of Noon.

W O R K S

PUBLISHED

BY THE COMMISSIONERS OF LONGITUDE,

AND

SOLD BY P. ELMSLY, IN THE *STRAND*.

I. THE NAUTICAL ALMANACS from 1767 to 1796, inclusive. *In Sheets, Price* 3*s.* 6*d.*

II. TABLES requisite to be used with the NAUTICAL ALMANAC. *1st Edit. Price* 2*s.* 6*d.* 1766.

III. The same. *2d Edit. enlarged and improved. Price* 5*s.* —

IV. PRINCIPLES of Mr. JOHN HARRISON's WATCH, with PLATES of the same. *Price* 5*s.* — 1767.

V. An ACCOUNT of the Going of Mr. JOHN HARRISON's WATCH at the ROYAL OBSERVATORY. *Price* 2*s.* 6*d.* 1767.

VI. THEORIA LUNÆ JUXTA SYSTEMA NEWTONIANUM, AUCTORE TOBIA MAYER. *Price* 2*s.* 6*d.* 1767.

VII. The METHOD of Constructing MURAL QUADRANTS, exemplified by a Description of the BRASS MURAL QUADRANT, in the ROYAL OBSERVATORY at *Greenwich:* To which is added, The METHOD of dividing Astronomical Instruments. By Mr. JOHN BIRD, Mathematical-Instrument-Maker. *Price* 2*s.* 6*d.* 1768.

VIII. TABULÆ MOTUUM SOLIS ET LUNÆ NOVÆ. ET CORRECTÆ, AUCTORE TOBIA MAYER: Or NEW AND CORRECT TABLES OF THE MOTIONS OF THE SUN and MOON. By TOBIAS MAYER. *Price* 5*s.* — 1770.

IX. GENERAL TABLES for correcting the Apparent Distance of the Moon and a STAR, or the SUN from the Effects of Refraction and Parallax, in 276 Sheets in Folio. *In Sheets, Price* 21*s.* — 1772.

*** *This Book is not perfect without Six Pages of Errata in the Reductions.*

X. ASTRONOMICAL OBSERVATIONS made in a *Voyage* towards the *South Pole* and round the *World* in His MAJESTY's *Ships*, the *Resolution* and *Adventure*, in 1772, 1773, 1774 and 1775 by WILLIAM WALES, F. R. S. Master of the Royal Mathematical School in Christ's Hospital, and Mr. WILLIAM BAYLY, late Assistant at the Royal Observatory.
Price 21*s* — 1777.

XI. DESCRIPTION of an Engine for dividing Circles and Arches of Circles on Mathematical Instruments, accompanied with Plates. By Mr. J. RAMSDEN, Mathematical-Instrument-Maker and Optician. *Price* 5*s*. — 1777.

XII. DESCRIPTION of an Engine for dividing Strait Lines on Mathematical Instruments, accompanied with Plates. By Mr. J. RAMSDEN, Mathematical-Instrument-Maker and Optician.
Price 5*s*. — 1779.

XIII. A SEXCENTENARY TABLE, exhibiting at Sight the Result of any Proportion where the Terms do not exceed 600 Seconds or 10 Minutes. By J. BERNOULLI, Astronomer to His *Prussian* MAJESTY. *In Sheets*, *Price* 5*s*. — 1779.

XIV. A SEXAGESIMAL TABLE, exhibiting at Sight the Result of any Proportion where the Terms do not exceed 60 Minutes; and a MILLESIMAL TABLE of proportional Parts, with other useful Tables. By MICHAEL TAYLOR.
In Sheets, *Price* 15*s*. — 1780.

XV. TABLES of the Products and Powers of Numbers. By CHARLES HUTTON, LL. D. and F. R. S. *Price* 7*s*. 6*d*. 1781.

XVI. ASTRONOMICAL OBSERVATIONS made in a *Voyage* to the *Northern Pacific Ocean* for discovering a North East or North West Passage, wherein the North West Coast of America and North East Coast of Asia were explored in His MAJESTY's *Ships*, the *Resolution* and *Discovery*, in 1776, 1777, 1778, 1779 and 1780, by Captain JAMES COOK, F. R. S. Lieutenant JAMES KING and Mr. WILLIAM BAYLY. *Price* 21*s*. — 1782.

XVII. GENERAL TABLES of the MOON's DISTANCE from the SUN and Ten principal FIXED STARS useful for finding the Longitude at Sea or Land.
In Boards, *Price* 5*s*. 6*d*. 1787.

XVIII. *MAYER's* LUNAR TABLES improved. By Mr. CHARLES MASON. *In Boards*, *Price* 5*s*. 6*d*. 1787.

XIX. ASTRONOMICAL OBSERVATIONS made in *Voyages* undertaken by ORDER of His present MAJESTY for making Discoveries in the *southern Hemisphere* and successively performed by Commodore BYRON, Captain WALLIS, Captain CARTERET and Captain COOK, in the *Dolphin*, *Tamer*, *Swallow* and *Endeavour*, in 1764, 1765, 1766, 1767, 1768, 1769, 1770 and 1771, extracted from the journals of the Commanders and the papers of Mr. CHARLES GREEN, formerly Assistant at the Royal Observatory, and put in order and computed by WILLIAM WALES, F. R. S. Master of the Royal Mathematical School in Christ's Hospital.

In Sheets, Price 10*s.* 6*d.* 1788.

N. B. To the NAUTICAL ALMANAC of 1769 are annexed, Instructions relative to the Observation of the Transit of Venus over the Sun's Disk on June 3d, 1769, by the *Astronomer Royal.*

To the NAUTICAL ALMANAC of 1771 are added, Tables for finding the Latitude from Two observed Altitudes of the Sun, with the Interval of Time, measured by a Watch, by Admiral *Campbell*, F. R. S. and new Tables for computing the Eclipses of Jupiter's Third Satellite, by the late Mr. *Wargentin*, F. R. S.

To the NAUTICAL ALMANAC of 1772 are annexed, Two Methods for clearing the apparent Distance of the Moon from the Sun or a fixed Star of the Effect of Refraction and Parallax, by the *Astronomer Royal* and the late Mr. *George Witchell*, F. R. S. and the Solution of a Problem in MERCATOR'S NAVIGATION, by the late Mr. *Lyons.*

To the NAUTICAL ALMANAC of 1773 is added, A new Table of Equations to equal Altitudes, by Mr. *William Wales*, F. R. S. also, A Catalogue of the Places of 387 Fix'd Stars in Right Ascension, Declination, Longitude and Latitude, adapted to the Year 1760, with their Magnitudes and annual Variations in Right Ascension and Declination, calculated from the late Dr. *Bradley's* Observations.

To the NAUTICAL ALMANAC of 1774 are added, The Result of a Series of 10 Years Lunar Observations of Dr. *Bradley*, compared with a Set of manuscript Tables; Elements of Lunar Tables and Remarks on the *Hadley's* Quadrant, by the *Astronomer Royal*; a Problem for finding the Error in the Position of a Transit Telescope, and Two Examples of the Calculation of the Longitude from a Lunar Observation, *&c.* by the late Mr. *Lyons.*

To the NAUTICAL ALMANAC of 1778 are added, Right Ascensions and Zenith Distances of the Moon deduced from Dr. *Bradley's* Observations; and Astronomical Problems by the late Mr. *Lyons.*

To the NAUTICAL ALMANAC of 1779 are added, New Tables for computing the Eclipses of Jupiter's second Satellite, by the late Mr. *Wargentin*, F. R. S.

WORKS, &c.

To the NAUTICAL ALMANAC of 1781 are added, Astronomical Problems, by the late Rev'd *John Edwards*, B. A.

To the NAUTICAL ALMANAC of 1787 is added, A Treatise, containing Directions for making the best Composition for the Metals of Reflecting Telescopes; and the Method of casting, grinding, polishing, and giving them the true parabolic Figure; and an Account of the Cause and Cure of the Tremors peculiarly affecting Reflecting Telescopes more than Refracting ones. By the late Rev'd *John Edwards*, B. A. And Remarks on the said Tremors by the *Astronomer Royal*.

To the NAUTICAL ALMANAC of 1788 is added, A Description of an accurate and simple Method of adjusting HADLEY's Quadrant for the back Observation. By *Robert Blair*, M. D.

To the NAUTICAL ALMANAC of 1791 are added, An Advertisement of the expected Return of the Comet of 1532 and 1661 in 1788. By the *Astronomer Royal*;

An Advertisement relative to the Disappearances and Reappearances of Saturn's Ring in 1789 and 1790. By the *Astronomer Royal*.

WHERE MAY BE HAD,

ASTRONOMICAL OBSERVATIONS

MADE AT

The ROYAL OBSERVATORY at GREENWICH,

By the Rev. NEVIL MASKELYNE, D.D. F.R.S.

And ASTRONOMER ROYAL,

In FOLIO.

VOL. I. from 1765 to 1774;

With TABLES

For Computing

The APPARENT PLACES of the FIXT STARS

And Reducing

OBSERVATIONS of the PLANETS,

By the SAME.

Price 25s. in Sheets.

VOL. II. from 1775 to 1786.

Price 30s. in Sheets.

Alſo, the OBSERVATIONS

Made in the YEARS 1787, 1788 and 1789.

Price 2s. 6d. for each Year, in Sheets.

PUBLISHED

By the PRESIDENT and COUNCIL of the ROYAL SOCIETY,

In OBEDIENCE to His MAJESTY's COMMAND.

LONDON, *June* 5, 1790.

Speedily will be publiſhed,

A

TABLE

OF

LOGARITHMIC SINES AND TANGENTS,

(Printed on *Superfine Elephant Paper*, about 480 *Pages*, 4*to.*)

Accurately computed to every SECOND of the QUADRANT, and to *Seven Places of Figures*, beſides the *Index*; with a Table of the Logarithms of Numbers from 1 to 100000 prefixed.

Inſcribed by Permiſſion

To the RIGHT HONOURABLE and HONOURABLE The COMMISSIONERS of the BOARD of LONGITUDE.

By *MICHAEL TAYLOR*,

One of the Computers of the *Nautical Ephemeris*; and Author of a *Sexageſimal Table*, publiſhed by ORDER of the COMMISSIONERS of the BOARD of LONGITUDE.

This Undertaking has been announced to the Public in the JOURNAL *des* SCAVANS *for June* 1786, Vol. II. page 1214, *where a ſhort account is given of its great utility and ſuperior advantages in all kinds of Calculations, but more eſpecially in thoſe relating to Aſtronomy and Navigation.*

Price to Subſcribers *Three Guineas*; one half to be paid at the time of ſubſcribing, and the other on the delivery of the Work.

To Non-Subſcribers the *Price* will be *advanced* to FOUR GUINEAS at leaſt.

SUBSCRIPTIONS are received at Mr. ELMSLY's, Bookſeller to the Board of Longitude, in the Strand; and at Mr. WINGRAVE's, Bookſeller, in the Strand; where may be ſeen the TABLE of the LOGARITHMS of NUMBERS and the TABLE of LOGARITHMIC SINES and TANGENTS, which are entirely printed off, being the whole of the Work, excepting the Explanation of the Tables and Precepts for the Uſe of them, which will be forwarded with the utmoſt expedition, and the Work will be publiſhed with all convenient ſpeed.

The ingenious Author, who unfortunately departed this Life on 23*d* of *December* laſt, having left behind him a Liſt of Errata of the Tables diſcovered by himſelf, which has ſince been printed at the End of the Tables, it is not now thought neceſſary by his Adminiſtrator to offer a Premium for the Diſcovery of any Error in the Tables.